

Working Capital Management and Liquidity Position Analysis of Travancore Titanium Products Limited

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Abstract

This paper deals with working capital management which is a crucial element of financial management since it guarantees operational continuity through maintaining a balance between current assets and current liabilities. This work will study working capital management and liquidity of Travancore Titanium Products Limited (TTPL), a government-owned PSU manufacturing titanium dioxide pigment in Thiruvananthapuram, Kerala. Specifically, the study aims at analyzing working capital management and liquidity of TTPL over a five-year period of 2019-20 to 2023-24. Secondary data sourced from annual reports and financial statements of the company were used for this purpose. Comparative balance sheet analysis, ratio analysis, and cash conversion cycle and trend analysis were used as analytical tools. Results show that TTPL demonstrated a persistent negative net working capital along with liquidity ratios which failed to meet the benchmark standards in all years under review. As for the cash conversion cycle, it was gradually improving. There was also profitability revival in 2022-23, followed by a capital injection by the government in 2023-24.

Keywords: Working Capital Management, Liquidity Position, Ratio Analysis, Cash Conversion Cycle, Travancore Titanium Products Limited, Public Sector Undertaking, Titanium Dioxide

Introduction

Working Capital Management forms one of the most important areas of Financial Management. This involves managing the working capital components such as the current assets and current liabilities in order to attain sufficient liquidity, uninterrupted operational continuity, and maximized profits. The term "working capital" is often referred to as the "lifeblood of business" as it directly affects the operational efficiency of an enterprise.

The liquidity position is an indicator of the ability of an organization to discharge its short-term obligations efficiently. An

adequate liquidity position can be seen as a source of confidence among various parties while an overly large liquidity position could mean inefficient utilization of resources. This calls for proper balance between liquidity and profitability which forms one of the key considerations for business organizations especially manufacturing companies that make substantial investments in inventories and accounts receivable.

This research focuses on Travancore Titanium Products Limited (TTPL), which is a government owned company set up in 1946 by the Government of Kerala, dealing in production of titanium dioxide pigment. Being a heavy manufacturing company, proper management of its working capital components, cash, inventories, accounts receivable, and accounts payable becomes extremely important for continued operations and financial health. In this context, the present study assesses the working capital and liquidity position of TTPL based on its financial data from five years i.e., 2019-20 to 2023-24.

Objectives of the Study

- To project the working capital position of the company over the study period.
- To evaluate the liquidity position of the company using appropriate financial ratios.
- To analyze the cash conversion cycle and working capital trends over the study period.

Research Methodology

The study is analytical in nature, using secondary data exclusively drawn from TTPL's audited annual reports and financial statements for the five-year period 2019–20 through 2023–24. No primary data was collected. The analytical tools employed are:

- Comparative Balance Sheet Analysis - absolute and percentage changes year-on-year
- Ratio Analysis - Net Working Capital, Current Ratio, Quick Ratio, Absolute Liquid Ratio, Working
- Capital Turnover Ratio, Inventory Turnover Ratio, Inventory Conversion Period, Debtors Turnover
- Ratio, Debtors Collection Period, Creditors Turnover Ratio, Creditors Payment Period, and Net Profit

Ratio

- Cash Conversion Cycle (CCC) - IHP + DCP – CPP
- Trend Analysis - base year 2019–20 = 100, for sales and purchases

Company Profile

Travancore Titanium Products Limited (TTPL) was established on 18th December 1946 as a public sector undertaking by the Government of Travancore (now known as Kerala) as a limited company with an authorized capital of Rs. 1.7 crores along with the technical collaboration from the British Titan Products Company Limited, United Kingdom. The company started its production in the year 1951, and subsequently in the year 1960, the State Government of Kerala took over the ownership of the company. Travancore Titanium Products Limited specializes in manufacturing titanium dioxide pigment by the Sulphate Route method, producing both Anatase and Rutile grades of titanium dioxide from ilmenite ore.

At present, the company has production capacity up to 45 metric tons a day. The company is considered to be the largest producer of Anatase grade titanium dioxide in India. TTPL employs 547 permanent employees and more than 200 contractual workers.

The company has been awarded the ISO 9001:2015 certification along with other quality awards from BIS, CAPEXIL, and Kerala State Pollution Control Board.

Review of Literature

The relationship between working capital management and firm performance has been extensively documented. Saloni Singha and Sunil Kumar (2025) found that at Godfrey Phillips India, a strong positive relationship exists between profitability and working capital efficiency, while liquidity ratios were negatively related to profit indicating the classic liquidity-profitability trade-off. Aditi Mathur et al. (2025) demonstrated that strategic formulation of working capital policies is essential in capital goods manufacturing, bridging operational finance and long-term corporate strategy. Hikmat Chamma and Bassam Hijazi (2025) showed that receivables management positively impacts liquidity, fully mediated by cash management — a finding directly relevant to TTPL’s receivables-heavy environment.

Rodgers Safari and Getrude Mwaneyefa (2024) underscored the importance of proactive working capital management during crises, arguing that cash management, inventory control, and receivables management are critical survival tools. Atul Kumar Paul (2024) found that receivable days significantly and positively correlate with ROA for Indian retailers, while payable days are negatively correlated. Arumona and Orbunde (2023) reported that while liquidity management has a negative and insignificant effect on firm value in Nigerian non-financial companies, working capital management practices positively and significantly affect price-to-book value. Demiraj, Dsouza, and Abiad (2022) showed that receivables collection period, inventory conversion period, and cash conversion cycle all significantly and negatively impact ROA in the European automotive industry — reinforcing the CCC framework applied in this study.

Research Gap: Existing literature concentrates on broad industry comparisons or profitability impacts, with less attention to granular, single-firm liquidity assessment in Indian public sector manufacturing — particularly in the titanium sector. This study addresses that gap.

Data Analysis and Interpretation

Net Working Capital Analysis

Net Working Capital (NWC) is the difference between current assets and current liabilities. A negative NWC indicates that current liabilities exceed current assets, reflecting a stressed liquidity position.

Table 1 Net Working Capital of TTPL (2019-20 to 2023-24)

Year	Current Assets	Current Liabilities	Net Working Capital
2019-2020	12319.91	20046.93	(7727.02)
2020-2021	10930.57	24105.48	(13174.91)
2021-2022	11580.1	13328.8	(1748.7)
2022-2023	10463.95	27979.66	(17515.71)
2023-2024	7838.65	22249.56	(14410.91)

Source: Annual Reports of Travancore Titanium Products Limited

TTPL has recorded a negative net working capital position for all five years, showing its persistent liquidity problem in terms of its structural aspect. The deficit amount has increased from ₹(7,727) lakhs in 2019-20 to ₹(13,175) lakhs in 2020-21 and has improved significantly to ₹(1,749) lakhs in 2021-22, i.e., the best year.

Thereafter, it has worsened sharply to ₹(17,516) lakhs in 2022-23 due to an increase in current liabilities and recovered partially to ₹(14,411) lakhs in 2023-24.

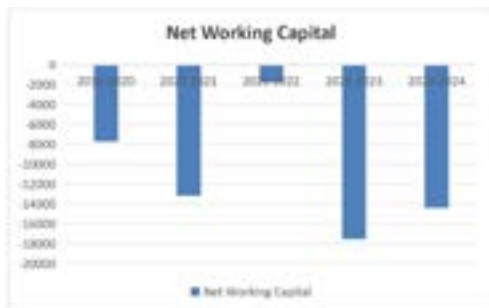


Figure 1 Net Working Capital of TTPL (2019-20 to 2023-24)

Ratio Analysis

Ratio analysis helps evaluate TTPL’s liquidity position and working capital management efficiency. The following table presents both the liquidity ratios and the key working capital management ratios together for ease of comparison.

Table 2 Liquidity Ratios of TTPL (2019-20 to 2023-24)

Ratio	2019-20	2020-21	2021-22	2022-23	2023-24
Current Ratio	0.61	0.45	0.87	0.37	0.35
Quick Ratio	0.42	0.32	0.43	0.14	0.16
Absolute Liquid Ratio	0.16	0.19	0.21	0.05	0.06

Source: Annual Reports of Travancore Titanium Products Limited

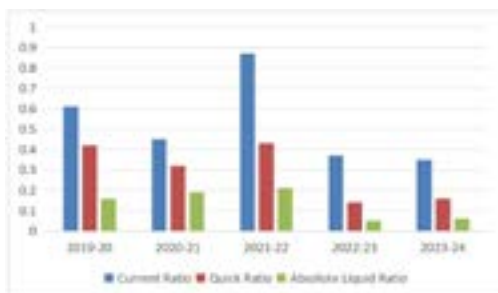


Figure 2 Liquidity Ratios of TTPL (2019-20 to 2023-24)

The liquidity position of the firm during the analyzed period can be described as unsatisfactory. The current ratio, which should ideally be 2:1, reached its highest point of 0.87 in 2021-22 but dropped drastically to 0.35 in 2023-24. The situation with the quick ratio was no better; the value of the quick ratio fell from the optimal 1:1 to 0.14 in 2022-23. The absolute liquid ratio, representing the shortest-term liquidity, showed the lowest result of 0.05 in 2022-23, far from the required 0.5:1 ratio. Thus, based on the data provided, it is apparent that TTPL had persistent difficulties meeting its short-term liabilities using the current liquidity of the business.

Table 3 Working Capital Management Ratios and Net Profit Ratio of TTPL (2019-20 to 2023-24)

Ratio	2019-20	2020-21	2021-22	2022-23	2023-24
Inventory Turnover Ratio	3.80	4.69	5.16	3.28	4.12
Inventory Holding Period (days)	96	78	71	111	89
Debtors Turnover Ratio	18.85	20.85	48.46	43.16	32.38
Debtors Collection Period (days)	19	18	8	8	11
Creditors Turnover Ratio	3.44	4.86	16.59	7.53	6.75
Creditors Payment Period (days)	106	75	22	48	54
Working Capital Turnover Ratio	(2.3)	(1.26)	(13.21)	(1.16)	(1.56)
Net Profit Ratio	(0.09)	(4.05)	0.11	(0.25)	(0.24)

Source: Annual Reports of Travancore Titanium Products Limited

The working capital management ratio analysis revealed some fluctuations in the working capital management performance of TTPL. While the inventory holding period decreased from 96 to 71 days in 2021-22 before increasing to 111 days in 2022-23 and declining to 89 days in 2023-24, the receivables collection period was lowest in 2021-22, when the collections were made within 8 days due to strict credit control measures implemented in the company. The creditors' payment period steadily decreased from 106 days in 2019-20 to 54 days in 2023-24. Notably, the working capital turnover ratio was negative in all periods, which could be attributed to the overall negative net working capital. Profitability, measured using the net profit ratio, was positive in only one analyzed year 2021-22.

Cash Conversion Cycle Analysis

The Cash Conversion Cycle (CCC) measures the time taken to convert investments in inventory and receivables into cash. $CCC = \text{Inventory Holding Period} + \text{Debtors Collection Period} - \text{Creditors Payment Period}$. A negative CCC indicates that the company collects from customers and manages payables faster than it cycles its inventory into sales.

Table 4 Cash Conversion Cycle of TTPL (2019-20 to 2023-24) (in Days)

Component (Days)	2019-20	2020-21	2021-22	2022-23	2023-24
Inventory Holding Period	96	78	71	111	89
(+) Debtors Collection Period	19	18	8	8	11
(-) Creditors Payment Period	106	75	22	48	54
Cash Conversion Cycle (CCC)	9	21	57	71	46

Source: Annual Reports of Travancore Titanium Products Limited

TTPL's cash conversion cycle shows a relatively stable upward trend throughout the five analyzed years. In the first two periods, the cash conversion cycle amounted to nine and twenty-one days, respectively. The explanation of these figures lies in the very high creditors' payment period, equaling 106 days and 75 days in the analyzed years. The reason behind this result was that receipts from customers were higher than payments to suppliers in these years. The creditors' payment period gradually decreased in the following periods, leading to a rise in the cash conversion cycle to 57 days in 2021-22 and 71 days in 2022-23, after which it decreased to 46 days in 2023-24. Thus,

it can be concluded that now the firm remits payments to suppliers faster but relies heavily on own money.

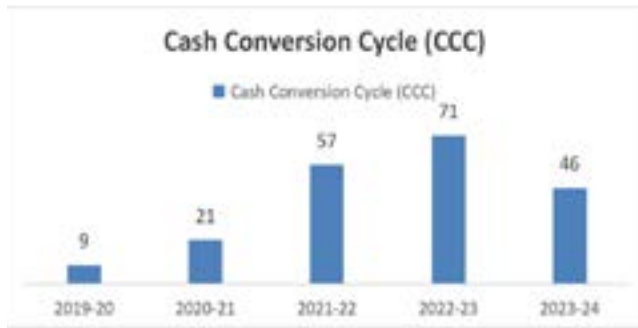


Figure 3 Cash Conversion Cycle of TTPL (2019-20 to 2023-24) (in Days)

Trend Analysis

Trend analysis examines the directional pattern of financial performance over time. The base year is 2019-20 (Index = 100), and subsequent years are expressed as percentages relative to the base year values. This helps in identifying long-term movements and structural shifts in the company’s financial position.

Table 5 Trend Analysis of Key Financial Items of TTPL (Base Year: 2019-20 = 100)

Item (Base Year 2019-20 = 100)	2019-20	2020-21	2021-22	2022-23	2023-24
Sales	100	93.18	130.00	114.59	126.41
Purchase	100	86.21	194.09	222.77	176.62

Source: Annual Reports of Travancore Titanium Products Limited

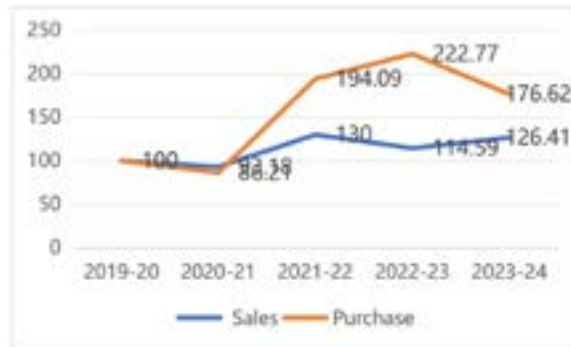


Figure 4 Trend Analysis of Key Financial Items of TTPL (Base Year: 2019-20 = 100)

The trend analysis indicates significant differences in the financial trends of TTPL. While there is a steady rise in sales from the base year up to an index of 130 in 2021-22 and then to 126.41 in 2023-24, which denotes a growth in the revenue base, there was a much higher increase in the index of purchases to reach 222.77 by 2022-23 and then fall back to 176.62 in 2023-24. What is alarming is the rate at which the cost of inputs increases compared to the growth in sales revenue, thereby leading to cost pressures in the business operations.

Key Findings

- The company maintained negative net working capital throughout the study period, indicating that current liabilities consistently exceeded current assets.
- Liquidity ratios such as current ratio, quick ratio, and absolute liquid ratio remained below standard benchmarks, reflecting weak short-term solvency.
- The current ratio declined from 0.61 (2019-20) to 0.35 (2023-24), showing a deteriorating liquidity position over time.
- In 2022-23, liquidity worsened, as current liabilities increased drastically while current assets declined.
- The inventory turnover ratio fluctuated, indicating inconsistent inventory management efficiency.
- The debtors turnover ratio improved in 2021-22, showing faster collection of receivables during that year.
- The creditors turnover ratio increased steadily, meaning the company is paying suppliers faster, which may affect liquidity.
- The working capital turnover ratio remained negative, due to continuous negative working capital.
- The cash conversion cycle increased from 9 days to 71 days, showing inefficient working capital management in later years.
- Faster payment to creditors (reduced payables period) significantly worsened the cash conversion cycle.
- The year 2023-24 shows partial recovery, with reduction in liabilities and capital infusion by the government.
- Overall, the company shows financial instability with moderate operational improvements.

Suggestions

- The company should improve its liquidity position by maintaining an adequate level of current assets.
- Efforts should be made to increase the current ratio towards the ideal 2:1 standard.
- The company must strengthen receivables management by adopting strict credit policies and faster collection methods.
- Inventory levels should be optimized using proper inventory control techniques to avoid excess holding.
- The company should negotiate longer credit periods with suppliers to improve cash flow.
- Dependence on borrowings should be reduced by improving internal fund generation.
- Proper cash management techniques and forecasting should be implemented.
- The company should aim to reduce the cash conversion cycle by balancing inventory, receivables, and payables efficiently.
- The management should focus on maintaining a balance between liquidity and profitability.
- Efficient working capital planning should be introduced to avoid negative working capital situations.
- Regular monitoring of financial ratios should be done for better decision-making.

Conclusion

The present study undertakes a comprehensive analysis of the working capital management and liquidity position of Travancore Titanium Products Limited for the five-year period from 2019-20 to 2023-24 through comparative balance sheet analysis, ratio analysis, cash conversion cycle analysis, and trend analysis.

The findings reveal that TTPL has consistently operated with a negative net working capital and below-standard liquidity ratios, reflecting significant structural liquidity challenges. The cash conversion cycle showed progressive improvement over the years, and profitability demonstrated a notable turnaround in 2022-23. The trend analysis confirmed strong sales growth alongside a concerning decline in liquid reserves. The Government of Kerala's capital infusion in 2023-24 has partially stabilized the financial position.

As a state-owned public sector undertaking with a strategic role in India's titanium dioxide industry, TTPL possesses the institutional strength and governmental backing to overcome its current working capital challenges. With focused efforts in inventory optimization, receivables management, cash conservation, and planned product diversification, the company can achieve improved liquidity and sustainable financial performance. It is hoped that the findings and recommendations of this study will serve as a useful reference for TTPL's management and contribute to the growing body of research on working capital management in Indian public sector manufacturing enterprises.

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