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Optimizing Working Capital Management to Enhance Corporate Profitability: From an Emerging Market Perspective

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ABSTRACT

Efficient working capital management stands at the heart of corporate financial resilience, shaping a firm's ability to sustain operations, manage liquidity, and generate profits in a volatile emerging market. This study examines the impact of working capital management on corporate profitability, focusing specifically on capital goods companies listed on the Colombo Stock Exchange (CSE). Utilizing panel data from 2015 to 2024, the study examines the impact of key working capital components, namely inventory efficiency, receivable period, payable period, and the overall cash conversion cycle on operating profit margin. The findings reveal cash conversion cycle has the negative significant effect on profitability which suggests that with a shorter cash conversion cycle tend to have higher operating profits as they efficiently manage their cash flow and reduce liquidity constraints. A detailed decomposed method revealed that longer inventory holding periods significantly reduce profitability, affirming global evidence that lean inventory enhances performance. Conversely, extending payables has a positive impact on profit, indicating delaying supplier payments within reasonable limits frees up cash for operations. Liquidity measured by current ratio also shows a strong positive effect on profitability, highlighting the importance of maintaining a sound short term financial position. Firm size is also positively impacting the profit, highlighting the advantages of scale. However, receivable collection period, firm age and leverage show no significant impact, suggesting that cost structures and internal operational efficiencies may play a more critical role in driving returns. This study contributes to financial management theory by reinforcing the trade off and resource-based views, emphasizing how efficient working capital management serves both as a strategic resource and a balancing act between liquidity and profitability. From a practical perspective, the results highlight the importance of vigilant working capital management practices in capital intensive sectors, providing actional insights for financial managers, investors and policymakers seeking to strengthen actional insights for financial resilience and optimize resource allocation in emerging market firms.

Keywords: Capital Goods Companies, Emerging Markets, Liquidity, Profitability, Working Capital Management

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INTRODUCTION

Working capital management is critical for a company's financial decisions and long-term sustainability. It refers to the management of a company's short term assets and liabilities, including inventory, receivables, and payables, to ensure sufficient liquidity available to support the overall financial stability (Stavropoulos & Zounta, 2025). Properly managing working capital ensures a balance between profitability and liquidity, improving operational performance, investment capacity, and reducing risk (Kiymaz, Haque and Choudhury, 2024; Habib and Dalwai, 2024).

The significance of WCM extends beyond financial stability; studies have consistently demonstrated that an optimized balance between profitability and liquidity positively impacts stock market performance, shareholder value, economic stability and corporate operational efficiency (Ballout et al., 2025). Efficient corporate investment further translates working capital management into superior firm performance. However, allocating resources between profitability and liquidity remains challenging for firms to meet short-term obligations (Fungai, 2024). In emerging markets, where access to finance is often restricted and cost of capital high, WCM serves as a strategic mechanism for maintaining solvency and competitiveness (Aldubhani et al., 2022; Garg & Meentu, 2022).

In the Sri Lankan context, several studies have explored this dynamic, particularly within the manufacturing and consumer staples sectors and found diverse effects of WCM across sectors. For instance, Amarasekara, Rathnayake and Pathirawasam (2021) found that components of WCM such as the cash conversion cycle and accounts payable days, have a significant negative impact on Return on Asset, suggesting that efficient WCM can enhance firm profitability. Similarly, Thenuwara and Ekanayake, (2021) observed that in Sri Lanka's consumer staples sector, a shorter receivables collection period positively correlates with profitability, emphasizing the importance of prompt receivables management. Shermila (2013) and Perera and Wickremasinghe (2010) confirmed that prudent WCM practices contribute to higher firm value by minimizing liquidity risk and financing costs. Yet, findings from other frontier markets in South Asia reveal contextual variations. Garg and Meentu (2022) identified a negative association between CCC and profitability among Indian automobile firms, while Amponsah-Kwatiah and Asiamah (2021) observed a positive impact in Ghana's manufactruing sector. These contrasting findings suggest that the effectiveness of WCM strategies may be context or sector specific. This divergence highlights the need for further investigation.

Despite these insights, there is a notable research gap concerning the capital goods sector in Sri Lanka. While extensive studies have been conducted on manufacturing and consumer staples sectors, the specific dynamics of WCM within the capital goods sector remain underexplored. This sector is unique due to its capital intensive operations, longer production cycles and higher working capital requirements, distinguishing it from industries with shorter operating cycles. Prior Sri Lankan studies (Amarasekara, Rathnayake & Pathirawasam, 2021; Thenuwara and Ekanayake, 2021) have largely focused on sectors with shorter cash cycles, thereby overlooking how capital intensity and scale influence the liquidity and profitability trade off. Addressing this gap is important, as the capital goods sector plays a pivotal role in the country's industrial base, supporting infrastructure development, technological diffusion and manufacturing supply chains.

This study focuses on analysing the impact of working capital management on the profitability of capital goods listed on the Colombo Stock Exchange from 2015 to 2204,

employing econometric models such as fixed effect, random effect and pooled OLS. For capital goods, which are often capital intensive, managing working capital becomes even more vital due to the larger scale of operations and more complex production cycles. These companies typically require significant investment in inventory, accounts receivable and payables management, making efficient working capital management essential to improving profitability. To guide this, the study addresses the following research questions.

- What is the impact of overall working capital efficiency measured by CCC on the profitability of capital goods companies in Sri Lanka?
- Which individual components of working capital (DIO, DSO, DPO, CR) impact firm profitability?

Hence, the objective of the study is to examine the overall impact of working capital management on the operating profitability of the companies and to further investigate which WCM components significantly impact the profitability of the companies.

While the study provides new insights, it is bounded by certain limitations. It focuses on a single sector and relies on secondary data from 2015 to 2024, which may not capture firm level managerial behaviour or post pandemic structural shifts. However, these constraints also open new paths for future research to explore behavioural aspects of WCM, cross sectoral comparisons and qualitative analyses integrating managerial perspectives.

By focusing on this underexplored sector, the study seeks to provide valuable insights that can inform financial strategies and contribute to the sustainable development of capital goods companies in Sri Lanka. The findings will be beneficial to investors, managers, and policymakers aiming to optimize financial decision-making and promote economic growth within the country. Additionally, this research will serve as a foundation for future studies on WCM in emerging economies, particularly in industries where capital allocation and liquidity management play a crucial role in long-term financial sustainability.

Through the analysis of WCM and its impact on profitability, this study aspires to bridge the existing knowledge gap and provide actionable recommendations for firms operating in the Sri Lankan capital goods sector. Ultimately, by enhancing financial strategies and promoting economic growth, the research will contribute to the broader objective of sustainable industrial development in Sri Lanka.

LITERATURE REVIEW

Theoretical Review

Working capital management (WCM) is grounded in several financial theories that explain its impact on profitability and firm performance. One of the most relevant is the Trade-off Theory, which suggests that firms must balance liquidity and profitability because holding too much working capital may reduce financial risk but limit investment opportunities and reduces the profitability due to idle resources, whereas holding too little may increase risk and constrain operations (Myers & Majluf, 1984).

Another key perspective is the Cash Conversion Cycle (CCC) Theory, which posits that a shorter CCC improves profitability by reducing the time capital is tied up in working capital (Shin & Soenen, 1998). The theory emphasizes that firms can enhance efficiency by optimizing receivables collection, inventory turnover, and payables deferral.

The Resource-Based View (RBV) Theory also provides insights into WCM, arguing that firms with superior financial management capabilities can leverage WCM practices as a competitive advantage (Barney, 1991).

Efficient WCM ensures that firms maximize resource utilization, improve cash flow, and sustain long-term profitability.

These theories collectively suggest that effective WCM is not just a financial necessity but also a strategic tool for sustaining firm growth, profitability, and market competitiveness. However, empirical evidence on its impact varies across industries, particularly in capital-intensive sectors such as capital goods.

Empirical Evidence

Empirical studies have extensively examined the relationship between WCM and firm profitability across different industries and economic contexts. This section synthesizes the empirical findings based on key WCM components, focusing on their effects on Operating Profit Margin (OPM) the dependent variable of this study.

Cash Conversion Cycle (CCC) and Profitability

Several studies suggest a negative relationship between CCC and profitability, supporting the argument that a shorter CCC enhances firm performance. Yazdanfar and Öhman (2014) using Swedish data, Chang (2018) with a global sample, Jaworski and Czerwonka (2022) in Poland and Johan et al. (2024), examining BRICS economies documented that reducing the CCC improves profit metrics. The intuition is that a shorter CCC reduces the time funds are tied up unproductively, thereby lowering the need for external financing and interest costs. A recent study in an emerging market context by Panigrahi (2025) on India's cement industry which is a capital intensive sector, reinforces this view, firms with shorter cash cycles enjoyed significantly better profitability. In contrast, some studies present opposing evidence, arguing that an excessively short CCC might harm firm operations. Enqvist et al., (2014) found that in volatile economic conditions, firms with very short CCCs faced operational inefficiencies, negatively impacting profitability. Aggressive inventory reduction leads to stockouts or overly strict credit policies reduce sales. These findings suggest an optimal range for CCC rather than the shorter, the better in all cases. But broadly, the consensus is that inefficiently long cash cycles are detrimental to firm performance.

H1: A longer cash conversion cycle has a negative effect on firm profitability.

Accounts Receivable Period and Profitability

Most studies suggest that a longer receivables period negatively impacts profitability, as delayed payments reduce cash flow efficiency. When customers take more time to pay, the firm's cash flow is constrained and it may need to borrow to bridge the gap, inuring interest costs. According to Hong et al., (2023), higher accounts receivable period indicates delayed receivables collection, negatively impacts profitability due to cash flow constraints. This effect is particularly significant for large airlines. Efficient accounts receivable management is crucial to mitigate these cash flow challenges and maintain financial performance, especially during periods of economic uncertainty. This aligns with evidence from other emerging markets. Hossain (2020), observed in Bangladesh's manufacturing forms that firms with shorter receivable periods had higher ROA, reflecting improved cash flow and reduced credit risks. However, contrasting evidence exists. Some firms extend credit terms strategically to build customer relationships and increase sales, which may enhance long-term profitability, especially in industries where credit terms influence customer retention. According to studies like Kiymaz et al. (2024), while longer period poses risks, well managed receivables can contribute positively to financial performance. Thus, the impact of DSO on profit can depend on how effectively a company manages its credit policy, balancing sales expansion against the cash flow implications.

H2a: DSO has a negative impact on firm profitability.

Inventory Management and Profitability

Efficient inventory management is critical to WCM, with most studies highlighting that excess inventory reduces profitability by increasing holding costs, insurance, risk of obsolescence, and tied up capital. Amarasekara, Rathnayake, and Pathirawasam (2021) found that in Sri Lanka's manufacturing sector, firms with optimized inventory turnover had higher returns on assets. This in lines with the findings from other markets that lean inventory management, formed by techniques like Just In Time (JIT), can enhance performance by cutting waste and freeing cash. Conversely, some research indicates that maintaining higher inventory levels can enhance profitability in industries with uncertain demand. Blinder and Maccini (1991) argue that firms holding excess inventory can quickly respond to market demands, avoiding stockouts and lost sales opportunities. In industries where demand is volatile or supply lead times are long, having extra stock on hand might prevent stockouts and thereby protect revenues (Hossain, 2020). However, the evidence tilts towards the efficiency gains of lower DIO.

H2b: Inventory days outstanding (DIO) has a negative impact on firm profitability.

Accounts Payable Period and Profitability

The relationship between payables management and profitability is mixed. Some studies suggest that delaying payments enhances liquidity and profitability by allowing firms to invest free cash flow elsewhere. Deloof (2003), showed from Belgian firms, that those waited longer to pay suppliers has higher profit metrics. However, Amarasekara et al. (2021) found that excessive reliance on delayed payments negatively impacted Sri Lankan firms' profitability, as it strained supplier relationships, lost supplier goodwill, weakened negotiations, supply disruptions and higher input costs. The suppliers may respond to very slow payments by raising prices or prioritizing other customers. Thus, the impact of DPO on profitability can be nonlinear, moderate increases in DPO improve liquidity and profit, but beyond a point, the negatives may outweigh the liquidity benefit. This study focuses on capital goods, involves sizable procurement and potentially bargaining power over suppliers, but maintaining good supplier relationships is essential. Hence, an optimal DPO exists beyond which further delay becomes counterproductive.

H2c : DPO has a positive impact on firm profitability.

Other factors as control variables (Liquidity, Size, Age)

In assessing WCM and profitability, it is important to consider additional variables that can influence the performance. One of the factor is liquidity, measured by current ratio. Liquidity indicators reflect a firm's ability to meet short term obligations. A higher current ratio is generally expected to have a positive effect on profitability up to a point, because it indicates financial flexibility and lower risk of distress. Recent research highlights that firms with sound liquidity can pursue profitable opportunities more freely and withstand shocks. Kiymaz et al. (2024) found that maintaining an adequate liquidity level is important for form performance in both developed and emerging markets. On the other hand, extremely high liquidity might suggest under utilized assets.

Firm size is another control variable often found to correlate with profitability. Laeger forms may enjoy economies of scale, better access to financing and stronger market power which can all lead to higher profit margins. Jaworski and Czerwonka (2022) showed a positive relationship, controlling for other factors. Firm age can proxy for experience,

reputation and accumulated knowledge; older firms might have more established networks and processes, potentially improving efficiency and profitability.

While numerous studies have examined WCM, research on its impact within Sri Lanka's capital goods sector remains limited. Given the capital-intensive nature of this industry, firms face distinct challenges in managing working capital, including longer production cycles, higher inventory holding costs, and complex receivables management. However, existing research largely focuses on broader industries, providing limited insights into the specific WCM dynamics of the capital goods sector. Additionally, most studies use ROA or ROE as profitability measures, overlooking Operating Profit Margin (OPM), which is particularly relevant for capital-intensive firms. Furthermore, empirical findings on WCM components remain mixed, highlighting the need for industry-specific research to identify optimal WCM strategies. This study seeks to bridge these gaps by analyzing the impact of WCM on OPM in Sri Lanka's capital goods sector, contributing to both academic research and practical financial decision-making.

RESEARCH METHODOLOGY

Research Philosophy and Approach

This study aims to examine the impact of working capital management on the profitabilty of companies. The philosophical foundations of this research are explored through ontological, epistemological and axiological perspectives. Ontologically, the study adopts an objectivist viewpoint, asserting that there are universal truths regarding the relationship between working capital management and profitability. Epistemologically, the research relies on multiple regression analysis to investigate the impact of working capital management on profitability. Researchers maintain an objective position, ensuring their detachment from the research process. In the axiological point of view, the study follows a deductive approach. Further, this study utilizes quantitative methods.

Data and Sample

This study examines capital goods companies listed in the Colombo Stock Exchange. As of 31st March 2024, a total of 27 companies were listed in this sector. The analysis covers 10 year period from 2015 – 2024, considering all listed firms. However, after data cleaning, two outlier companies were removed, leaving 25 companies for the final analysis. Secondary data were sourced from the company websites, financial statements, and the Colombo Stock Exchange website.

Model Framework

To empirically access the impact of WCM on profitability, two regression specifications are used. Equation 01 examines the aggregate effect of the cash conversion cycle on profitability while Equation 02 decomposes the CCC into its components DIO, DSO and DPO.

Equation 01

$$OPM = \beta_0 + \beta_1 CCC_{it} + \beta_2 CA_{it} + \beta_3 AGE_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$$

Equation 02 – Decompose the CCC into DIO, DSO and DPO

$$OPM = \beta_0 + \beta_1 DIO_{it} + \beta_2 DSO_{it} + \beta_3 DPO_{it} + \beta_4 CA_{it} + \beta_5 AGE_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \varepsilon_{it}$$

Where,

OPM Margin = Operating Profit

DIO Outstanding = Days Inventory

DSO Outstanding = Days Sales

DPO Outstanding = Days Payable

CA = Current Ratio

AGE = Age of the company

SIZE = Size of the company

LEV = Leverage

ε_{it} = Error term

β_0 = Constant/ Intercept

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ = Coefficients

Operationalization

Table 1: Operationalization

Variables	Indicator	Measurement	Reference
Operating Profit Margin (OPM)	Measure the generated operational profit from core business of the firm	Operating Profit / Total Revenue	Khresat and Jassar (2025)
Days Inventory Outstanding (DIO)	Measure the average number of days it takes for a company to sell its inventory	Average Inventory * 365 / Cost of Sales	Kiymaz et al. (2024)
Days Sales Outstanding (DSO)	Measure the average number of days it takes for a company to collect payment after a sale	Average Receivables * 365 / Total Revenue	Kiymaz et al. (2024)
Days Payable Outstanding (DPO)	Measures the average number of days a company takes to pay its suppliers	Average Payables * 365 / Cost of Sales	Kiymaz et al. (2024)
Cash Conversion Cycle (CCC)	Calculates the number of days it takes for a company to convert inventory and receivables into cash while considering the time taken to pay its supplier	DIO+DSO-DPO	Kiymaz et al. (2024)
Current Ratio	Measures a company's ability to cover its short-term liabilities with its short-term assets	Current Asset / Current Liabilities	Kiymaz et al. (2024)

AGE	refers to the number of years a company has been in operation	Current year – Established year	Kiymaz et al. (2024)
Firm Size (SIZE)	Refers to the scale of a company	Log (Total Assets)	Kiymaz et al. (2024)
Leverage	Refers to the use of borrowed funds (debt) to finance a company's operations and investments	Total Debt / Total Assets	(Kiymaz et al., 2024)

Source: Literature survey

This study employs operating profit margin instead of traditional accounting returns such as ROA and ROE because OPM isolates operational efficiency from financing and tax effects, providing a clearer measure of managerial control over WCM. This focus is particularly relevant in capital intensive industries where financing structures vary widely.

Estimation Techniques and Diagnostic testing

The study employed a panel data approach to capture both cross-sectional and time series variations among forms over the 10-year period. The analysis was conducted using Stata 17, incorporating descriptive statistics, correlation analysis, unit root testing and regression modeling. After confirming data quality, pooled OLS, fixed effects and random effects modes were estimated and model selection tests, namely F test, LM test and Hausman test are used to select the suitable model.

ANALYSIS

Descriptive Statistics

The data set consists of 250 observations, capturing key financial variables related to working capital management and firm characteristics. On average, firms take 11 2.9 days sell inventory, 98.3 days collect receivables and 100.5 days to settle payables. The cash conversion cycle averages 110.7 days with a wide range from -14.3 to 433.6 days. Liquidity indicators show a current ratio of 2.0 and a quick ratio of 1.5, implying that most firms maintain adequate current assets to cover short term liabilities. Profitability, measured by the operating profit margin averages 10%. Firms are on average 52.6 years old and the leverage ratio is relatively low, averaging 0.2, ranging from 0.0 to 0.7, reflecting most capital goods firms are mature and relatively conservative in debt financing.

Table 2: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
DIO	250	112.9	70.0	4.7	395.8
DSO	250	98.3	64.2	11.6	402.8
DPO	250	100.5	57.0	2.0	351.3
CCC	250	110.7	88.6	-164.3	433.6
CR	250	2.0	2.0	0.3	20.6
QR	250	1.5	1.8	0.2	19.1
OPM	250	0.1	0.4	-3.9	1.1
Size	250	7.1	1.3	4.2	10.0
Age	250	52.6	29.6	5.0	132.0
LEV	250	0.2	0.1	0.0	0.7

Source: Author Constructed

Correlation among Variables

Table 3: Correlation Matrix

	DIO	DSO	DPO	CCC	CR	QR	OPM	SIZE	AGE	LEV
DIO	1									
DSO	-0.04	1.00								
DPO	0.11	0.44	1.00							
CCC	0.69	0.41	-0.24	1.00						
CR	0.10	0.05	-0.07	0.15	1.00					
QR	0.00	0.13	0.05	0.06	***0.97***	1.00				
OPM	-0.08	-0.07	0.01	-0.12	-0.16	-0.19	1.00			
SIZE	0.19	-0.07	0.12	0.03	0.02	0.02	-0.09	1.00		
AGE	-0.13	0.03	0.17	-0.19	-0.27	-0.22	0.00	0.45	1.00	
LEV	-0.20	-0.07	0.00	-0.21	-0.50	-0.44	0.02	-0.05	0.38	1.00

Source: Author Constructed

The correlation matrix suggests a strong positive correlation between CR and QR (0.97), indicating redundancy, hence, for this study only CR is taken to represent the liquidity of the company.

Multicollinearity Test

Table 4: Variance Inflation Factor

Variable	VIF	1/VIF	Variable	VIF	1/VIF
Age	1.62	0.62	Age	1.69	0.59
Leverage	1.54	0.65	Leverage	1.56	0.64
Size	1.36	0.74	Size	1.46	0.68
CR	1.35	0.74	CR	1.35	0.74
CCC	1.07	0.93	DPO	1.33	0.75
			DSO	1.28	0.78
Mean VIF	1.39		DIO	1.15	0.87
			Mean VIF	1.4	

Source: Author Constructed

The Variance Inflation Factor (VIF) analysis indicates that multicollinearity is not a significant concern in the mode as all VIF values are well below the critical value of 10. The mean VIF is 1.39 to 1.4, suggesting low overall multicollinearity.

Unit root test

A unit root test is conducted to ensure the stationarity of variables, as non-stationary data can lead to spurious results. The Levin, Lin, and Chu (LLC) test is used to check for unit roots in panel data before proceeding with regression analysis.

Table 5: Unit root test

Variable	Levin, Lin and Chu unit root result at level		Conclusion
	t- statistics	Probability	
OPM	-6.1841	0.0000	Stationary at zero level
CCC	-7.2882	0.0000	Stationary at zero level
DIO	-4.5579	0.0000	Stationary at zero level

DSO	-4.4010	0.0000	Stationary at zero level
DPO	-7.4732	0.0010	Stationary at zero level
CA	-3.1767	0.0007	Stationary at zero level
SIZE	-2.2760	0.0014	Stationary at zero level
AGE	-6.3542	0.0000	Stationary at zero level
LEV	-5.9678	0.0000	Stationary at zero level

Source: Author Constructed

The results show that all variables, including OPM, CCC, DIO, DSO, DPO, CA, SIZE, AGE, and LEV, are stationary at level ($p < 0.05$), confirming that no further differencing is needed for reliable regression analysis.

Regression Analysis

Pooled OLS

Table 6: Pooled OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.4683	0.1471	3.1800	0.0020
CCC	-0.0005	0.0003	-1.7000	0.0910
CR	-0.0352	0.0133	-2.6500	0.0090
SIZE	-0.0238	0.0202	-1.1800	0.2400
AGE	0.0000	0.0010	0.0300	0.9780
LEV	-0.2681	0.1918	-1.4000	0.1640
Adjusted R- squared	0.0295	Observation		250
F	2.51	Prob > F		0.0307

Source: Author Constructed

The Adjusted R-squared value of 0.0295 indicates that only approximately 2.95% of the variation in the dependent variable is explained by the independent variables, highlighting the model's relatively weak explanatory power. However, the F-statistic of 2.51, with a p-value of 0.0307, suggests that, despite the low R-squared, the independent variables as a whole are statistically significant in explaining the variation in the dependent variable at the 5% significance level.

Next fixed effect model is run. The Adjusted R-squared of 0.2435 suggests that about 24.35% of the variation in the dependent variable is explained by the independent variables, showing a notable improvement in explanatory power compared to the Pooled OLS model. The F-statistic of 14.17, with a p-value of 0.0000, is highly significant, indicating that the independent variables as a whole are statistically significant in explaining the variation in the dependent variable. Next random model is run

Table 7: Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.3493	0.8182	-2.8700	0.0040
CCC	-0.0007	0.0003	-2.4100	0.0170
CR	0.1275	0.0166	7.7100	0.0000
SIZE	0.4046	0.1600	2.5300	0.0120
AGE	-0.0124	0.0096	-1.2900	0.1970
LEV	0.2229	0.2356	0.9500	0.3450
Adjusted R- squared	0.2435	Observation		250
F	14.17	Prob > F		0.0000

Source: Author Constructed

Table 8: Random effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.2976	0.1882	1.5800	0.1140
CCC	-0.0005	0.0003	-2.0000	0.0460
CR	0.0174	0.0144	1.2100	0.2250
SIZE	-0.0260	0.0270	-0.9600	0.3350
AGE	0.0006	0.0013	0.4700	0.6410
LEV	0.0001	0.2122	0.0000	1.0000
Adjusted R- squared	0.1076	Observation		250
Wald chi2	6.77	Prob > chi2		0.0000

Source: Author Constructed

The Random Effect Model has an Adjusted R-squared of 0.1076, indicating that approximately 10.76% of the variation in the dependent variable is explained by the independent variables, suggesting relatively weak explanatory power. However, the Wald chi-squared statistic of 6.77 with a p-value of 0.0000 is statistically significant at the 5% level, confirming that, collectively, the independent variables are statistically significant in explaining the variation in the dependent variable.

The Breusch and Pagan LM test suggests that the Random Effect Model is more appropriate than the Pooled OLS Model. This is indicated by the chi-bar squared statistic of 42.23 with a p-value of 0.0000, showing strong evidence in favor of the random effects specification over pooling the data. The F-test result (F(1, 220) = 8.34, p-value = 0.0045) suggests that the Fixed Effect Model is preferred over the Pooled OLS Model. This indicates that individual heterogeneity should be accounted for to improve the model's accuracy. Finally, the Hausman test (chi2 = 191.88, p-value = 0.0000) indicates that the Fixed Effect Model is more suitable than the Random Effect Model, as it suggests significant differences between the random and fixed effects

Table 9: Comparison between Model

Tests	Breusch and Pagan LM test	F test	Hausman test
	chibar2(01) = 42.23 Prob > chi2 = 0.0000	F(1, 220) = 8.34 Prob > F = 0.0045	chi2= 191.88 Prob > chi2 = 0.0000
Comparison	Random VS Pooled	Fixed VS Pooled	Fixed effect VS Random
Suitable Model	Random effect	Fixed effect	Fixed Model

Source: Author Constructed

estimators. Therefore, the Fixed Effect Model is the most appropriate model for analyzing the data in this case.

The Fixed Effect Model revealed that CCC has a significant negative impact on operating profit, with a coefficient of -0.0007 and a p-value of 0.0170, making it statistically significant at the 5% level. This finding suggests that a longer CCC reduces profitability, likely due to inefficiencies in working capital management, such as slow inventory turnover or delayed receivables, which increase financing costs. Firms with a shorter CCC tend to have higher operating profits as they efficiently manage their cash flow and reduce liquidity constraints which is supported by Amarasekara et al. (2021) and Panigrahi, (2025) who reported similar results for manufacturing and cement industries. CR has a positive coefficient of 0.1275 and is highly significant with a p-value of 0.0000. This means that better liquidity, as indicated by a higher current ratio, positively influences operating profit. SIZE has a positive coefficient of 0.4046 and a p-value of 0.0120, indicating that larger firms tend to have higher operating profits due to economies of scale and better access to financial resources. On the other hand, AGE and LEV are insignificant at the 5% level, with p-values of 0.1970 and 0.3450, respectively. This suggests that in this model, the maturity of the firm and its capital structure do not have a significant direct impact on operating profit, aligning with the finding of Shermila (2013) and Thenuwara and Ekanayake (2021).

Next, a detailed breakdown of the Cash Conversion Cycle (CCC) is used to conduct the analyse of impact of working capital management on the company's profitability.

Table 10: Pooled OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.4921	0.1550	3.1700	0.0020
DIO	-0.0004	0.0004	-1.0800	0.2810
DSO	-0.0006	0.0004	-1.5000	0.1340
DPO	0.0004	0.0005	0.8300	0.4070
CR	-0.0351	0.0134	-2.6200	0.0090
SIZE	-0.0259	0.0211	-1.2300	0.2200

AGE	0.0001	0.0010	0.1400	0.8890
LEV	-0.2743	0.1937	-1.4200	0.1580
Adjusted R- squared	0.0502	Observation		250
F	1.83	Prob > F		0.0829

Source: Author Constructed

The adjusted R^2 value of 0.0502 indicates that the model explains only 5.02% of the variation in the dependent variable, suggesting weak explanatory power. Additionally, the F-statistic of 1.83, with a p-value of 0.0829, implies that the overall model is not statistically significant at the conventional 5% level. This suggests that the independent variables, when considered together, do not provide a strong explanation for the variations in the dependent variable, highlighting the need for potential model improvements, such as incorporating additional relevant predictors or exploring alternative model specifications.

Table 11: Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.0489	0.8271	-2.4800	0.0140
DIO	-0.0008	0.0004	-2.0400	0.0430
DSO	0.0001	0.0005	0.2400	0.8110
DPO	0.0013	0.0005	2.7900	0.0060
CR	0.1294	0.0166	7.7900	0.0000
SIZE	0.3420	0.1611	2.1200	0.0350
AGE	-0.0121	0.0095	-1.2700	0.2070
LEV	0.2354	0.2336	1.0100	0.3150
Adjusted R- squared	0.2636	Observation		250
F	11.15	Prob > F		0.0000

Source: Author Constructed

The adjusted R^2 value of 0.2636 indicates that the model explains approximately 26.36% of the variation in the dependent variable, suggesting a moderate level of explanatory power. The F-statistic of 11.15, with a p-value of 0.0000, confirms that the overall model is statistically significant, meaning the independent variables collectively have a meaningful impact on the dependent variable.

Next the random effect model is performed. The adjusted R^2 value of 0.1303 suggests that the model explains approximately 13.03% of the variation in the dependent variable, indicating relatively low explanatory power. Additionally, the Wald chi^2 statistic of 7.33, with a p-value of 0.3949, shows that the overall model is not statistically significant, implying that the independent variables

Table 12: Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.2671	0.1967	1.3600	0.1740
DIO	-0.0005	0.0004	-1.3900	0.1630
DSO	-0.0005	0.0005	-1.0800	0.2810
DPO	0.0008	0.0005	1.6000	0.1090
CR	0.0196	0.0145	1.3500	0.1770
	-0.0268	0.0281	-0.9600	0.3390
AGE	0.0005	0.0013	0.4200	0.6770
LEV	0.0183	0.2143	0.0900	0.9320
Adjusted R- squared	0.1303	Observation		250
Wald chi2	7.33	Prob > chi2		0.3949

Source: Author Constructed

collectively do not have a strong impact on the dependent variable. The lack of significance across all predictor variables suggests that the random effects model may not be the best fit for the data. Based on the overall significance of the model, both pooled OLS and Random effect models are rejected and it is confirmed that fixed effect model is most suitable to explain the variation. However, following tests are carried out to confirm the results.

The model selection tests indicate that the Breusch and Pagan LM test (p = 0.0000) favors the random effects model over the pooled model, while the F-test (p = 0.0140) supports the fixed effects model over the pooled model. Additionally, the Hausman test (p = 0.000) confirms that the fixed effects model is the most suitable, as it provides more consistent estimates compared to the random effects model. Therefore, the fixed effects model is the preferred specification for this analysis.

Table 13: Comparison between Model

Tests	Breusch and Pagan LM test	F test	Hausman test
	chibar2(01) = 39.82 Prob > chi2 = 0.0000	F(1, 218) = 6.14 Prob > F = 0.0140	chi2= 713.87 Prob > chi2 = 0.000
Comparison	Random VS Pooled	Fixed VS Pooled	Fixed effect VS Random
Suitable Model	Random effect	Fixed effect	Fixed Model

Source: Author Constructed

Hence fixed effect model is chosen to explain the outcome. The negative and significant relationship between DIO and OPM suggests that higher inventory levels reduce profitability due to increased holding costs and obsolescence. Firms should optimize

inventory turnover by implementing Just-in-Time (JIT) systems and improving demand forecasting to minimize excess stock (Blinder & Maccini, 1991). The positive and significant effect of DPO on OPM highlights that delaying payments helps retain cash for operational needs, improving profitability. Firms should negotiate extended payment terms with suppliers while maintaining good relationships to avoid disruptions in supply chains. This is supported by other researchers based on Sri Lankan context (Shermila, 2013; Amarasekara et al., 2021; Hossain, 2020).

A strong positive relationship between CR and OPM implies that firms with better liquidity tend to have higher profitability. Maintaining a well-balanced liquidity position enables businesses to cover short-term obligations while investing in profit-generating activities. Further, the positive relationship between firm size and OPM suggests that larger firms benefit from economies of scale, stronger market presence, and better bargaining power. Smaller firms should focus on strategic expansion and cost efficiencies to enhance profitability.

However, the insignificant impact of DSO on OPM indicates that receivables collection efficiency does not directly affect profitability. This suggests that firms either have effective credit policies or that other cost factors dominate. Businesses should still monitor credit terms to ensure they do not lead to liquidity constraints. However, according to Thenuwara and Ekanayake (2021), only DSO had the contradicting significant relationship with profitability while DIO and DPO had insignificant results.

The insignificant impact of firm age on OPM indicates that experience alone does not guarantee higher profitability. Firms should prioritize continuous innovation, efficiency, and market adaptability to sustain competitive advantage regardless of their age. The non-significant relationship between leverage and OPM suggests that higher debt levels do not necessarily translate into improved profitability. Firms should carefully structure their debt to ensure it supports growth without increasing financial risk.

DISCUSSION AND IMPLICATIONS

This study contributes to the growing body of research on working capital management and corporate profitability, offering sector specific insights from the capital goods industry in a frontier market. While prior literature has extensively examined WCM dynamics in manufacturing and consumer sectors, this study focuses on a capital intensive industry that plays a strategic role in Sri Lanka's industrial development. The results reveal that inventory efficiency, liquidity strength and firm size significantly influence profitability, whereas receivable management and firm size exhibit limited impact. These findings validate and extend recent studies from both emerging and developed markets, emphasizing that efficient WCM is not just a liquidity management function, but a strategic determinant of value creation (Kiymaz et al., 2024; Garg & Meentu, 2022; Panigrahi, 2025).

The findings support the liquidity and profitability trade off theory, suggesting that firms must maintain an optimal balance between holding sufficient liquid assets and maximizing returns. The negative and significant coefficient of the cash conversion cycle reinforces the argument that shortening operational cycles improves profitability by reducing financing costs and freeing cash for productive investment. This evidence also aligns with the resource based view which says that internal financial efficiency, achieved through prudent working capital control, includes a competitive capability, specially in liquidity constrained environments.

From a managerial perspective, the results highlight the importance of operational discipline and liquidity governance. Financial managers should prioritize optimizing inventory turnover through lean supply chain

practices and demand forecasting, negotiating favorable credit terms with suppliers to extend interest free financing and maintaining adequate current ratios to safeguard operational continuity. This aligns with Vlismas (2024)'s study, which demonstrated that managerial strategy moderates the WCM and profitability relationship, emphasizing that firms aligning operational policy with strategic objectives realize stronger financial outcomes. Smaller firms can enhance profitability by improving scale efficiency and working capital agility, while larger firms should leverage their financial strength for process automation and long term supplier partnerships.

The insignificance of receivables, firm age and leverage offers a different contribution to the debate on contextual determinants of profitability. In emerging and frontier economies, where institutional financing channels remain underdeveloped, these variables may not show the same explanatory power observed in mature markets (Garg and Meentu, 2022; Amponsah-Kwatiah and Asiamah, 2021). This aligns with Cosima et al. (2025)'s study which noted the macroeconomic relationships between WCM components and firms' profitability.

At the policy level, the study provides insights for regulators and financial authorities, as well as policymakers, particularly the Central Bank of Sri Lanka and the Securities and Exchange Commission. These institutions should strengthen financial reporting standards and credit policy frameworks to enable firms to maintain transparent liquidity metrics and responsible supplier financing practices. Introducing working capital optimization guidelines, facilitating digital trade credit platforms and promoting supply chain financing mechanisms would reduce liquidity bottlenecks and improve cash flow resilience across industries.

CONCLUSION

This study analyses the impact of working capital management on the profitability within the capital goods sector listed on the Colombo Stock Exchange over 2015 to 2024, employing a fixed effects panel regression model. The analysis reveals that efficient management of inventory, payable and liquidity significantly enhances profitability, while excessive inventory holdings and poorly structured debt reduce performance. Firm size was positively associated with profitability, reinforcing the importance of scale efficiencies in capital intensive industries. Beyond empirical confirmation, the findings advance the theoretical understanding of the liquidity profitability trade off by showing that effective WCM is not merely a short term financial practice but a strategic capability that strengthens firms' competitiveness, consistent with the resource based view. From an applied perspective, the study offers actionable insights for managers to optimize working capital cycles, balance liquidity and profitability and design context appropriate financing strategies in frontier markets. At the policy level, results highlights the need for regulatory bodies such as the Central Bank of Sri Lanka and the Securities and Exchange Commission, to encourage transparent liquidity reporting supply chain financing mechanisms and working capital efficiency benchmarks. Hence, this research contributes to both academic disclosure and practical policy formulation by highlighting working capital management as a driver of sustainable financial performance and industrial resilience in emerging economies.

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