



WORKING CAPITAL MANAGEMENT AND FINANCIAL PERFORMANCE: EVIDENCE FROM COMMERCIAL STATE CORPORATIONS IN KENYA

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Abstract

This study investigates the effect of working capital management (WCM) on the financial performance of commercial state corporations in Kenya. The study focuses on three key working capital components: Days Inventory Outstanding (DIO), Days Sales Outstanding (DSO), and Days Payables Outstanding (DPO), and their relationship with financial performance, measured by Return on Assets (ROA). Using a sample of 28 commercial state corporations over a 10-year period (2014–2023), the study employs a random-effects GLS regression model to analyze the data. The results show that while DIO has a positive but insignificant effect on ROA, DSO negatively affects financial performance, and DPO positively influences financial performance. The findings underscore the importance of effective payables

management in enhancing profitability and suggest that working capital management, particularly in receivables and payables, plays a crucial role in the financial performance of commercial state corporations. The study contributes to the existing literature by providing empirical evidence from a developing economy, specifically within the Kenyan context, and offers practical insights for improving financial performance through better management of working capital.

Keywords: Working capital management, financial performance, days inventory outstanding, days sales outstanding, and days payables outstanding

INTRODUCTION

The efficient management of working capital (WCM) plays a vital role in ensuring the financial stability and growth of firms. The current study particularly focuses in the context of commercial state corporations. In an increasingly competitive global market, where liquidity and operational efficiency are crucial, firms must adopt effective WCM strategies to balance the management of short-term assets and liabilities (Chasha et al., 2022). These strategies directly affect a firm's liquidity, profitability, and overall financial performance, which are essential for sustaining long-term growth and achieving organizational objectives (Habib & Dalwai, 2023). Effective WCM practices ensure that firms have sufficient liquidity to meet operational needs, manage cash flows efficiently, and mitigate the risk of financial distress (Osei et al., 2023). As a result, working capital management is recognized as a fundamental factor influencing a firm's financial performance (Gallegos, 2022).

Commercial state corporations in Kenya, which contribute significantly to the country's GDP and employment, operate within a unique public sector framework that requires effective WCM to maintain financial health. These corporations face a variety of challenges, such as economic volatility, regulatory changes, and public sector accountability, all of which can affect their liquidity and profitability (Goode, 2020). The ability to efficiently manage working capital in such an environment is crucial for ensuring that these entities fulfill their roles in public service delivery while maintaining financial sustainability (Riany, 2021). Despite their importance, the management of working capital in Kenyan commercial state corporations has received limited academic attention, especially regarding its impact on financial performance (Onsongo, 2023).

Cash Conversion Cycle (CCC) is an important parameter used in gauging the effectiveness of WCM decisions, it is the time between purchases for input resources and the time cash is collected from credit sales less the payables period. It is the time resources of the firm are tied up in the business cycle (Mahmood et al., 2022). Moreover, the presence of WCM

can also be measured through the firm's periodic liquidity analysis. In this analysis, liquidity position can be recognized by the risk and return characteristics (Mandipa & Sibindi, 2022). The current study operationalized WCM utilizing the CCC. This choice was justified because it provided a comprehensive and integrated metric, encompassing the efficiency of cash flows through the entire working capital process, offering insights into the effectiveness of the organization's liquidity management.

Profitability, liquidity, solvency, and efficiency are a few examples of the metrics that may be used to evaluate financial performance (Gartenberg, Prat & Serafeim, 2019). A company's profitability is determined by how much profit it is making in relation to its sales or investments. This covers figures for return on assets (ROA), net income, and gross profit margin. How quickly a corporation can fulfill its immediate financial commitments is measured by its liquidity. Metrics like the current ratio, quick ratio, and cash ratio are examples of this (Barardehi, Bernhardt & Davies, 2019). Efficiency assesses how effectively a business uses its resources and assets to produce sales and profits. Metrics like the asset turnover ratio and inventory turnover ratio fall under this (Nugroho & Sugiyanto, 2023). The current study measured financial performance using ROA as it is a widely recognized and accepted metric that efficiently evaluates the efficiency of an organization in generating profits from its assets, offering a robust indicator of overall operational effectiveness and resource utilization.

In the context of commercial state corporations, it is critical to understand how the management of working capital influences financial performance, as these entities often have large-scale operations with complex financial needs. Effective WCM can directly impact key financial metrics such as return on assets, profitability, and overall organizational efficiency, which are essential for fulfilling the corporations' mandates (Riany, 2021). Given that these entities often operate under different financial constraints compared to their private-sector counterparts, it is essential to explore how public-sector corporations can optimize their working capital to improve their financial outcomes (Goode, 2020).

Research Problem

The relationship between working capital management and financial performance has been studied in various settings, but few studies have focused specifically on public-sector entities in Kenya. Previous studies in Kenya have examined working capital management in small and medium-sized enterprises (SMEs) (Chasha et al., 2022; Waweru & Atheru, 2022), but the specific dynamics within the public sector, particularly in commercial state corporations, remain underexplored. This research sought to contribute to this gap by providing empirical

evidence on how WCM affects the financial performance of commercial state corporations in Kenya, using the cash conversion cycle as the primary measure of WCM efficiency.

Given the role of commercial state corporations in Kenya's economic development, this study's findings are expected to provide insights into how these entities can improve their financial performance by adopting better working capital management practices. The research was grounded in the need to understand the specific challenges faced by these corporations in managing liquidity, especially in the face of unpredictable cash flows, large public-sector budgets, and stringent regulatory requirements (Riany, 2021). By focusing on this sector, the study aimed to offer practical recommendations for policy makers and managers to optimize financial performance through effective working capital management.

Research Objective

To determine the effect of working capital management on financial performance of commercial state corporations in Kenya

LITERATURE REVIEW

Theoretical Review

The theoretical review section of this study outlines several key theories that explain the relationship between working capital management (WCM) and financial performance. The anchor theory used in this study is the trade-off theory, which posits that firms must balance the costs and benefits of holding too much or too little working capital (Myers, 1984). According to this theory, firms should find an optimal level of working capital that maximizes their liquidity without leading to inefficiencies. In relation to WCM, the theory highlights the trade-off between maintaining sufficient liquidity to meet operational needs and minimizing the cost of holding excess cash (Agyei et al., 2020).

The study also employs free cash flow (FCF) theory, which suggests that companies generate surplus cash after meeting operational expenses and capital investments, and this surplus can be used for re-investment or distribution to shareholders (Jensen, 1986). Effective WCM, through improved liquidity, leads to higher free cash flows, positively impacting financial performance and shareholder value (Saeed & Qazi, 2022).

Additionally, agency theory is used to explore the role of firm-specific factors such as managerial efficiency in shaping working capital decisions (Jensen & Meckling, 1976). The theory suggests that conflicts may arise between shareholders (principals) and managers (agents) when decisions related to WCM are made, particularly when managers prioritize their own interests over maximizing shareholder value. The study uses this theory to understand how

managerial behavior influences the efficiency of working capital management and, ultimately, the financial performance of firms.

Transaction cost economics (TCE) theory is also applied to elucidate how firm characteristics, such as technological innovations, influence WCM decisions (Williamson, 1993). According to TCE, firms strive to reduce transaction costs by optimizing processes like inventory management and supplier relationships, which can improve their WCM practices and overall financial performance (Park & Ungson, 2021).

Empirical Review

The empirical review examines the relationship between WCM and financial performance through various global and regional studies, highlighting methodologies, findings, and gaps. Sawarni et al. (2022) examined Indian SMEs and found that better WCM practices, such as a shorter cash conversion cycle (CCC), were positively correlated with improved financial performance. Similarly, Waweru and Atheru (2022) focused on supermarkets in Nairobi, Kenya, and found that a higher quick ratio had a significant positive effect on financial performance. Their study also revealed that inventory turnover and creditor turnover had little to no impact. These findings are consistent with Agyei et al. (2020), who argue that effective management of working capital can improve profitability. Arnaldi et al. (2021) conducted a study in the U.S. manufacturing sector and found that shorter CCCs were linked to better profitability, supporting the notion that efficient WCM positively influences financial performance.

In a more context-specific study, Othuon et al. (2021) examined small-scale coffee mills in Kenya and found that inventory management and payment periods significantly impacted financial performance. Their study focused on SMEs and noted that business size and age had an impact on return on assets (ROA). This research highlights the importance of firm-specific factors in understanding how WCM influences financial outcomes. Similarly, Kadhim et al. (2021) found that managing inventory and receivables effectively was positively related to profitability in the UAE manufacturing sector. Their findings emphasized the relevance of efficient WCM for improving liquidity and profitability in firms. However, as these studies often focused on specific industries or regions, the results may not be directly applicable to Kenyan commercial state corporations due to differences in market structures and financial environments.

Other studies such as those by Yakubu et al. (2020) and Hung and Su Dinh (2021) found a significant positive impact of WCM on financial performance, particularly in terms of free cash flow (FCF). These studies suggest that better control over working capital components such as receivables and payables results in higher FCF, which can then be reinvested to boost

firm performance. The research by Mollah and Lipy (2021) further confirms this finding by demonstrating that FCF mediates the relationship between WCM and financial performance. The research in the context of Kenya's commercial state corporations is limited, and therefore, this study aims to contribute to the knowledge by focusing on the specific relationship between WCM and financial performance in Kenyan public sector firms.

Despite the extensive empirical research on WCM, several gaps remain. Conceptually, previous studies have operationalized WCM and financial performance differently, leading to inconsistent findings. Methodologically, many studies have used cross-sectional data, which limits the ability to capture the dynamic nature of WCM and its long-term effects on financial performance. The lack of longitudinal studies, particularly in the context of public sector organizations in Kenya, represents a significant gap in the literature. Contextually, many studies have been conducted in developed economies, and their findings may not be directly applicable to developing economies like Kenya, where commercial state corporations face different operational challenges and regulatory environments. Thus, this study aims to fill these gaps by providing empirical evidence on the relationship between WCM and financial performance within Kenyan commercial state corporations, using panel data analysis to capture long-term trends and effects.

Conceptual Framework

The conceptual framework is as presented in Figure 1. The conceptual framework for this study focuses on the relationship between working capital management (WCM) and financial performance. It posits that effective WCM, by optimizing the management of inventory, receivables, and payables, leads to improved financial performance. The framework suggests that efficient WCM enhances liquidity and profitability, which in turn positively affects the financial outcomes of commercial state corporations in Kenya.

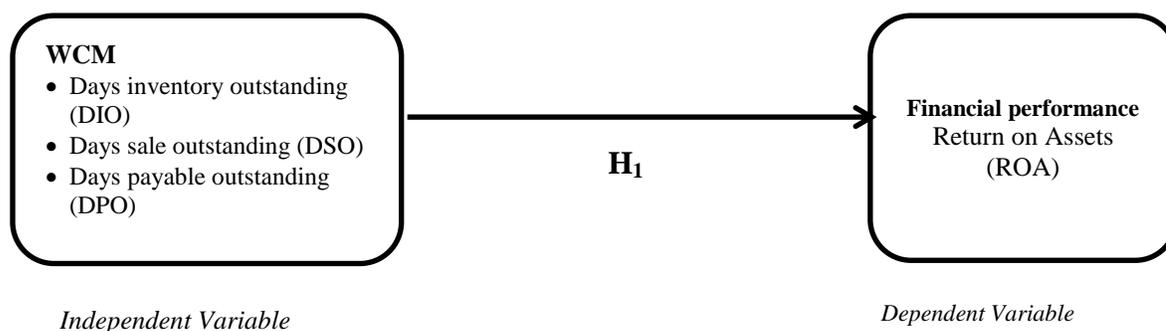


Figure 1: The Conceptual Model

METHODOLOGY

The methodology of this study was specifically tailored to explore the effect of working capital management on the financial performance of commercial state corporations in Kenya. The study adopted a positivist research philosophy, aligning with the objective of empirically examining the relationship between working capital management and financial performance. This approach ensured the use of well-established research methods and statistical tests to enhance the credibility and reliability of the findings. A descriptive panel research design was employed, as it allowed the analysis of data across multiple organizations over a time period, effectively capturing both cross-sectional and time-series variations. The study focused on 28 commercial state corporations in Kenya, using a census approach to collect data from all entities, ensuring a comprehensive analysis and minimizing sampling errors.

To operationalize the variables, working capital management was measured through three key indicators: days inventory outstanding (DIO), days sales outstanding (DSO), and days payable outstanding (DPO). Financial performance, the dependent variable, was measured using return on assets (ROA). Secondary data, spanning from January 2014 to December 2023, was sourced from the annual reports provided by the Office of the Auditor General and the individual commercial state corporations in Kenya. The rationale for selecting data up to 2023 was because audited financial reports for some commercial state corporations for 2024 were yet to be finalised. The data analysis involved descriptive statistics to summarize the data and inferential statistics, including regression and correlation analyses, to test the hypothesis related to the relationship between working capital management and financial performance. Diagnostic tests such as normality, multicollinearity, autocorrelation, and heteroscedasticity tests were performed to ensure that the data met the necessary assumptions for reliable statistical analysis. The methodology was designed to provide a robust examination of the influence of working capital management on financial performance. The regression equation was as follows:

$$ROA_{it} = \beta_0 + \beta_1 DIO_{it} + \beta_2 DSO_{it} + \beta_3 DPO_{it} + \varepsilon$$

Where:

ROA = Financial performance of firm (i) at time (t)

DIO_{it} = Days inventory outstanding

DSO_{it} = Days sales outstanding

DPO_{it} = Days payable outstanding

B_s = Regression coefficients

β₀ = intercept

t = time period

ε = Error term

RESULTS AND DISCUSSION

Descriptive Results

Table 1 presents the summary of descriptive statistics for the variables under study, including DIO, DSO, DPO, and Return on Assets (ROA). The mean value of ROA, at -0.03, highlights that, on average, the financial performance of the firms studied was slightly negative, with a coefficient of variation (CV) of -4.06, indicating high variability in performance across different commercial state corporations.

Table 1: Summary of Descriptive Statistics

stats	DIO	DSO	DPO	ROA
N	280	280	280	280
min	5.369763	3.380527	5.443258	-0.80374
max	142.6252	296.7157	359.7701	0.565741
mean	61.31277	101.7264	125.1612	-0.03058
sd	28.71383	69.85366	81.74025	0.124225
cv	0.468317	0.686682	0.65308	-4.06265
se(mean)	1.71598	4.174555	4.884914	0.007437
variance	824.4841	4879.534	6681.468	0.015432

The descriptive statistics reveal that DIO has a mean of 61.31 days with a standard deviation of 28.71, indicating substantial variability in the time that inventory remains within firms. The maximum DIO observed was 142.63 days, suggesting some firms hold inventory for significantly longer periods than others. Similarly, DSO has a mean of 101.73 days, with a higher standard deviation of 69.85, which indicates a considerable variation in the time it takes firms to collect receivables. On the other hand, the DPO variable shows that, on average, it takes firms about 125.16 days to settle their payables, with a standard deviation of 81.74, reflecting considerable variation in payment cycles across firms.

Hypothesis Testing

The regression analysis for testing the relationship between working capital management and financial performance, as shown in Table 2, was conducted using a random-effects Generalized Least Squares (GLS) regression model. The regression results provide insight into the relationship between the three key variables: DIO, DSO, and DPO with ROA.

Overall, the regression model is significant, with a Wald chi2 statistic of 38.89 and a p-value of 0.000, indicating that the model as a whole explains a significant portion of the variation

in financial performance. The within R-squared value of 0.0669 and the overall R-squared value of 0.3474 suggest that the model accounts for a moderate proportion of the variability in ROA, indicating that factors other than working capital management may also play a significant role in influencing financial performance.

Table 2: Working Capital Management and Financial Performance

Random-effects GLS regression		Number of obs	=	280		
Group variable: Company ID		Number of groups	=	28		
R-sq:		Obs per group:				
within = 0.0669		min	=	10		
between = 0.4578		avg	=	10		
overall = 0.3474		max	=	10		
		Wald chi ² (3)	=	38.89		
Corr (u _i , X) = 0 (assumed)		Prob > chi ²	=	0.000		
ROA	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
DIO	0.074037	0.041322	1.79	0.073	-0.00695	0.155026
DSO	-0.05791	0.025337	-2.29	0.004	-0.13501	-0.00919
DPO	0.145834	0.039219	3.72	0.000	0.022702	0.268966
_cons	1.534428	0.202444	7.58	0.000	1.137644	1.931211

The coefficient for DIO is 0.074037, with a p-value of 0.073, indicating a positive but marginally insignificant relationship with financial performance (ROA). The coefficient suggests that, on average, a longer inventory holding period slightly improves financial performance. However, given the p-value is greater than 0.05, the hypothesis that DIO has a significant effect on financial performance is not fully supported.

The coefficient for DSO is -0.05791 with a p-value of 0.004, which is statistically significant at the 5% level. This suggests that longer receivables collection periods negatively affect financial performance, aligning with the expectation that delays in collections can hinder liquidity and overall profitability.

The coefficient for DPO is 0.145834, with a p-value of 0.000, indicating a statistically significant positive relationship with ROA. This result implies that firms with longer payables periods are better able to manage their liquidity and may have greater operational efficiency, which positively impacts their financial performance.

The findings from this analysis support the idea that working capital management plays an important role in determining the financial performance of commercial state corporations in Kenya. While the DIO variable had a marginally insignificant positive relationship with financial performance, both DSO and DPO were found to significantly influence ROA, but in opposing directions. The negative relationship between DSO and financial performance highlights the importance of efficient receivables collection, as longer collection periods tend to tie up liquidity and reduce profitability. Conversely, the positive relationship between DPO and ROA suggests that taking longer to settle payables may provide firms with a strategic advantage in managing their cash flow and improving liquidity, thus enhancing profitability.

These findings are consistent with prior studies, such as Waweru and Atheru (2022) and Arnaldi et al. (2021), which have shown that working capital management directly influences the financial performance of firms. The study also supports the application of trade-off theory, where companies must balance between holding adequate liquidity (through inventory and receivables management) and maintaining profitability (through optimized payables management). However, the marginal effect of DIO points to the complexity of the working capital management process, where factors such as market dynamics, firm-specific strategies, and external economic conditions can influence the overall impact on financial performance.

CONCLUSION

This study focused on determining the effect of working capital management on the financial performance of commercial state corporations in Kenya. The findings revealed that effective working capital management, particularly in managing Days Sales Outstanding and Days Payables Outstanding, significantly influenced financial performance, as measured by Return on Assets. The negative relationship between DSO and ROA suggests that firms with shorter collection periods perform better financially, while the positive relationship between DPO and ROA implies that firms that extend their payables period can improve liquidity, potentially enhancing profitability. However, the marginally significant positive effect of Days Inventory Outstanding indicates a need for further investigation into its role in financial performance, as the relationship was not as clear-cut as the other components of working capital.

The study also confirmed the theoretical underpinnings of trade-off theory, which suggests that firms must find an optimal balance between holding too much or too little liquidity to maximize performance. This balance is particularly crucial for commercial state corporations, where efficient liquidity management is key to maintaining operational stability and fulfilling their roles in the economy. The regression model used in this study proved to be significant, explaining a moderate proportion of the variation in financial performance, further validating the

importance of working capital management in determining the financial health of state corporations.

RECOMMENDATIONS

The study found that the efficiency of managing receivables, as represented by DSO, significantly affects the financial performance of commercial state corporations. It is recommended that these corporations adopt stricter credit policies and improve their collection processes to reduce the time taken to collect receivables. This will enhance cash flow and reduce liquidity constraints, contributing positively to profitability.

The positive relationship between DPO and financial performance indicates that strategically extending the period for settling payables can improve liquidity and operational efficiency. Commercial state corporations should review their supplier payment terms to ensure that they are maximizing their cash flow while maintaining good supplier relationships. However, it is crucial that this strategy does not negatively impact supplier relationships or lead to increased costs in the long term.

While the study showed a marginally positive effect of DIO on financial performance, this relationship was not statistically significant. Further research into how inventory management practices can impact profitability across different industries is recommended. For now, commercial state corporations should focus on inventory turnover optimization and avoid holding excessive stock that might tie up resources unnecessarily.

LIMITATIONS OF THE CURRENT STUDY

One of the primary limitations of this study was its reliance on secondary data obtained from annual reports and audited financial statements of commercial state corporations. To overcome this limitation, the study ensured the data was sourced from reputable and audited records, such as reports from the Office of the Auditor General, which are subject to rigorous validation processes. This approach minimized the risk of inaccuracies and enhanced the reliability of the data.

Another limitation is that the study focused exclusively on commercial state corporations in Kenya, which may limit the generalizability of the findings to other sectors or countries with different economic and regulatory environments. To address this limitation, the study adopted a robust methodological framework, including a census approach, to ensure comprehensive coverage of the target population. Additionally, the study's use of theories such as Trade-off Theory and Free Cash Flow Theory provides a foundation for applying the findings to similar contexts, while also encouraging comparative studies in other settings.

Further, the study concentrated on specific variables—working capital management, free cash flows, and firm-specific factors—potentially overlooking other relevant variables that might influence financial performance, such as market competition or macroeconomic shocks. To mitigate this limitation, the study incorporated a robust diagnostic framework, including multicollinearity and heteroscedasticity tests, to ensure the reliability of the variables included in the model. Furthermore, control variables such as business risk, technological innovations, and managerial efficiency were included to provide a broader analytical perspective and minimize omitted variable bias.

The study relied on panel data analysis, which captures trends over time but does not fully account for dynamic changes within organizations or external environments. This static approach may limit the ability to detect short-term fluctuations or causal effects over time. To address this limitation, the study used a 10-year data period (2014–2023) to capture long-term trends and patterns, ensuring a comprehensive temporal analysis. The use of robust statistical techniques, such as random-effects GLS regression, further enhanced the reliability of the findings by addressing potential biases associated with panel data.

SUGGESTIONS FOR FURTHER RESEARCH

Given the findings of this study, it is recommended that further research be conducted to examine the dynamic relationships between working capital management and financial performance in different sectors within the public sector. Future studies should also explore other factors such as government regulations and policy changes that may influence working capital strategies in commercial state corporations.

Finally, commercial state corporations should invest in training their management teams on advanced working capital management techniques and the strategic importance of liquidity management. This will empower managers to make informed decisions that align with both short-term and long-term financial goals, thereby improving the overall financial health of these organizations.

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