

REVIEW PAPER

The Effect of Cash Conversion Cycle on Company Earnings and Profitability

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ABSTRACT

Finance serves as the lifeblood of every business, and effectively managing finances stands as a crucial element for any company's sustenance. This study delves into the examination of how a Cash Conversion Cycle (CCC) influences a company's earnings. For this purpose, five companies from the Fortune 500 list are selected and ten years of data are extracted from their annual reports for analysis. Employing statistical methodologies, using a sample of firms from diverse industries, we employ regression analysis to examine how variations in the CCC affect profitability yardsticks like Return on Assets (ROA) and Return on Equity (ROE). Implications of this probe extend to financial managers, policymakers, and investors, emphasizing the paramountcy of efficient working capital management in enhancing firm profitability, earnings, and sustainability in competitive markets.

HIGHLIGHTS

- ① The CCC is widely recognized as one among the pivotal facets of finance within the realm of subject.
- ② By considering industry-specific dynamics, firm characteristics, and potential non-linearities, researchers can provide deeper insights into the mechanisms through which working capital management influences financial performance.
- ③ Through this research, the aspiration is to provide actionable insights for financial managers, policymakers, and investors, highlighting the importance of maximizing the CCC to enhance the earnings and competitive edge of firms in the current dynamic business landscape.
- ④ The research employs data covering a timeframe of ten years, focusing on the top five companies listed in the Fortune 500 for the year 2022.

Keywords: ROE, ROA, Profitability, Cash conversion cycle

The decisions regarding financial management made by organizations primarily revolve around working capital management (WCM) which stands out as crucial for all companies, given its profound influence on both overall profitability and liquidity (Appuhami, 2008; Murtala Zakari, 2016). Sound WCM is paramount for the survival and eventual expansion of organizations. Scholars in this field dedicate efforts to assessing the efficacy of managing inventories, accounts payable, accounts receivable, and cash, aiming to establish

links between effective management practices and the firm's growth and development goals (Akinlo, 2012). WCM encompasses the allocation of money towards rotating assets, which constitutes a significant portion of total asset investments, along with decisions regarding the financing of these investments (Veli and Ozbek, 2015). The size of a

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company indicates its capacity to effectively handle its working capital. Larger companies have a higher probability of engaging in debt-related transactions, underscoring the critical importance of WCM (Rizky and Mayasari, 2018). The operational effectiveness of a firm hinges primarily on how efficiently oversees resources continuously. Despite this, many underestimate the importance of WCM, ending with missed opportunities for optimizing business potential. Consequently, it is of paramount concern that firms prioritize managing their working capital in a manner conducive to long-term prosperity (Altaf and Ahmad, 2019).

In effectively managing working capital, a firm must grasp the average timeframe needed to transform its products and services into cash, a concept commonly referred to as CCC (Chiou *et al.* 2006). The formula for computing the CCC serves as a valuable method for assessing how adeptly a business deals with its WC and cash flow (Altaf and Shah, 2017). Similar to other cash flow metrics, a shorter cash conversion cycle indicates superior performance in selling products, collecting cash from sales, and fulfilling obligations and supplier payments. Research here seeks to dissect the complex relationship of CCC on a company’s earnings. The findings suggest that a shorter CCC correlates with heightened company earnings (Altaf and Shah, 2018).

Of the primary elements comprising working capital, the CCC stands as a critical factor in gauging a company’s liquidity, operational effectiveness, and ultimately, its profitability (Banos *et al.* 2014).

Despite the theoretical significance of the CCC-profitability relationship, empirical evidence

regarding its impact remains mixed and context-dependent. While some research indicates a potential negative relationship between the CCC and earnings, suggesting that companies with smaller CCC typically experience greater returns. Others propose non-linear or industry-specific dynamics that complicate the relationship (Iqbal *et al.* 2020). Additionally, the impact of company-specific attributes, like size and industry affiliation, on this relationship remains underexplored (Mathuva, 2014).

Through this research, the aspiration is to provide actionable insights for financial managers, policymakers, and investors, highlighting the importance of maximizing the CCC to enhance the earnings and competitive edge of firms in the current dynamic business landscape (Nazir and Afza, 2008). Also, the researcher endeavors to explore the potential moderating effects of industry characteristics and firm size on this relationship, thereby offering insights into the nuanced dynamics of working capital management across different organizational contexts (Niskanen and Niskanen, 2006).

Perspective of different authors through Literature analysis

Wang (2002) defines CCC as the average duration necessary to convert the investment in raw materials into cash received from customers. In their study, Stine & Moss (1993) elucidate that the CCC is the disparity in duration from accounts receivable to payable. Among the pillars of financial management, CCC reigns supreme (Abiodun and Samuel, 2014).

Table 1: Concepts explained

Particulars	Meaning	Author(s)
Cash cycle time (CCT)	It represents the period among the receipt of money from consumers and the payment of cash to sources.	Mansoori and Muhammad, 2012
CCC	Is calculated as the days of payables outstanding subtracted by the average collection duration.	Hager, 1976
Cash cycle	It denotes the duration needed to collect payments from customers, settle obligations with suppliers, and transform cash into inventory of raw materials.	Padachi, 2006
Cash gap	It assesses the duration of the money going out for expenses associated with acquiring raw materials and the money coming in from customers through the sale of goods/services.	Eljely, 2004

Source: Compiled by the researcher.

Every stage of this cycle influences cash inflows and outflows, consequently affecting a company's financial health and bottom line. Firms operating at optimal levels can effectively manage their cash flow, thereby enhancing their firm value (Nazir and Afza, 2009).

The duration of the CCC is contingent upon the magnitude of the company. Research by Stine & Moss (1993) focused on retail firms and revealed that greater firms typically process shorter CCC. Eljely (2004) explored the connection between profitability and liquidity in his study, revealing an inverse correlation between earnings and the CCC. Hutchison *et al.* (2007) investigated 21 government firms to identify a straight association between smaller cash conversion cycles and greater profits.

The correlation among the CCC and company's earnings has been a subject of extensive research in both academic literature and practical management contexts. Financial experts, both in academia and the real world, have long been interested in how effectively managing WCM impacts a company's bottom line, with particular emphasis on the role of the CCC as a key determinant (Peles and Schneller, 1989).

Early studies investigating the CCC-profitability relationship laid the groundwork for subsequent research by highlighting the need for managing the parts of WC effectively. Deloof (2003) was among the pioneers in this field, examining the effect of WCM policies, including the CCC, on a company's profitability in Belgian organizations (Malik, 2013).

Building upon Deloof's work, several researches have subsequently investigated CCC-earnings relationship across different industries and geographical contexts. Pakistani firms with sluggish cash cycles were found to suffer lower profitability, highlighting the importance of efficient cash management, as shown by Raheman and Nasr (2007). Similarly, Lazaridis and Tryfonidis (2006) conducted a study in Greece and observed a similar negative association between the CCC and company's earnings.

However, the association among the CCC and earnings is not universally consistent across all studies (Qurashi and Zahoor, 2017). Some researchers have proposed non-linear relationships or moderating effects of firm-specific and industry-

specific factors. For example, Shin and Soenen (1998) argued that while a shorter CCC generally leads to higher profitability, excessively low levels of inventory and receivables may compromise firms' ability to meet demand and adversely affect profitability (Soenen, 1993). Additionally, industry characteristics such as capital intensity, market competitiveness, and technological innovation have been suggested to influence the CCC-profitability relationship (García and Martínez 2007).

Furthermore, the magnitude and financial health of firms have been identified as potential moderators of the CCC-profitability relationship. Small and financially constrained firms may face challenges in optimizing their working capital management practices, leading to less pronounced effects of the CCC on profitability compared to larger, more financially robust counterparts (Baños *et al.* 2010).

Overall, while there is substantial evidence supporting an inverse association among the CCC and the company's earnings, the nuances of this relationship warrant further investigation. By considering industry-specific dynamics, firm characteristics, and potential non-linearities, researchers can provide deeper insights into the mechanisms through which working capital management influences financial performance (Murugesu, 2013). Moreover, empirical studies utilizing robust methodologies and comprehensive datasets are essential for advancing our understanding of the CCC-profitability relationship and informing strategic decision-making in practice (Wilner, 2000).

Research Methodology and Objectives

Focusing on profitability as a potential outcome, this research examines the correlation between a company's CCC and its financial metrics, specifically average assets and gross turnover as size indicators and ROA and ROE as profitability measures. The research employs data covering a time-frame of ten years, focusing on the top five companies listed in the Fortune 500 for the year 2022. Specifically, data from the years 2013 to 2022 are collected for analysis.

1. Comprehending the concept of the CCC.
2. To investigate the potential influence of the firm's magnitude and the company's earnings.

ANALYSIS AND DISCUSSION

The CCC quantifies the duration required to transform its investments in stock and associated resources into money, a firm typically relies on generating revenue through turnover. It stands as a widely recognized indicator for assessing marketability and effectiveness of an organisations WCM. The underlying concept of CCC is to illustrate the organisations efficacy in cash generation, thereby mirroring its financial status and operational efficiency.

Cash conversion cycle includes three components namely:

(a) Days Inventory Outstanding (DIO): This denotes the typical time it takes for an organisation to liquidate its stocks, serving as a gauge of the company’s inventory management efficiency. A reduction in the Days Inventory Outstanding (DIO) signifies the company’s effectiveness in swiftly selling its inventory and accelerating cash generation.

(b) Day Sales Outstanding (DSO): This denotes the typical time it takes for an organisation to receive remittance from debtors, primarily concentrating on

the company’s accounts receivables. A decrease in the Days Sales Outstanding (DSO) signifies efficient recovery of accounts receivables.

(c) Days Payable Outstanding (DPO): This denotes the typical time it takes for an organisation to settle its accounts payable. A higher Days Payables Outstanding (DPO) suggests an extended holding period for the company before satisfying its accounts payables.

DATA ANALYSIS

The analysis focused on the top five companies listed in the June 2022 Fortune 500 list. Data spanning ten years were gathered from their annual reports for examination. The study findings demonstrate a negative CCC is preferable than a positive one, indicating that shorter cycles have led to greater success for these companies. The analysis revealed a negative mean for the CCC, indicating that all five companies exhibit improved CCC.

Examination of the research reveals an inverse correlation among CCC and the organisation’s ROA. Additionally, it indicates a positive correlation between sales and the CCC. While other factors

Table 2: Table showing mean value

Variable	REL INDIA	LIC	INFOYSIS	ONGC	IOC
CCC	-736.840	-812.6030	-1642.320750	-335.270740	-996.1370
ROE	-0.197170	-16.97850	+0.64733333	+0.1550	+0.5330
ROA	+0.013760	+0.0650530	+0.31666666	+0.10707142	+0.43789
Turnover on Asset	+3970.88	+75335.11	+9077.277778	+10202.47143	+9754.7863
Sales revenue	+6.672333	+9.539732	+10.19939594	+7.143983073	+8.3489

Table 3: Table showing Correlation Analysis

		(CCC)	(ROE)	(ROA)	(TA)	(SA)
(CCC)	Pearson correlation	1	-0.041	-0.11	-0.065	0.022
	Sig. (2 tailed)		0.91	0.230	0.297	0.659
(ROE)	Pearson correlation	-0.041	1	0.267	-.315**	-0.232
	Sig. (2 tailed)	0.91		0.266	0.005	0.109
	N			50	50	50
(ROA)	Pearson correlation	-0.11	0.267	1	-0.041	0.031
	Sig. (2 tailed)	0.230	0.266		0.91	0.513
(TA)	Pearson correlation	-0.065	-.315**	-0.041	1	.466**
	Sig. (2 tailed)	0.297	0.005	0.91		0
(SA)	Pearson correlation	0.022	-0.232	0.031	.466**	1
	Sig. (2 tailed)	0.659	0.109	0.513	0	

** .At 1% level of significance; * .At 5% level of significance.

may influence CCC, this research indicates that size alone is not a reliable predictor. It is also evident that various other factors influence working capital, as total assets or total sales do not impact the CCC.

ROA and ROE are some of the parameters utilized to gauge the organisation's earnings. Furthermore, the research endeavors to assess the correlation among the CCC and earnings. Pearson correlation analysis is employed for this purpose. The data analysis reveals an inverse association among the CCC and earnings. Hence suggesting that the CCC does not affect the organization's profitability.

Table 4: Table showing Regression Analysis

Constructs	Coeff.	SE	t- stats	Significance
ROE	(2.432)	4.623	(0.2688)	0.914
ROA	(1432.1)	1146.642	(1.825)	0.132
TA	(-0.004)	0.008	(1.582)	0.471
Sales	72.688	74.572	0.62	0.736
R square				
Adjusted R square	-0.007			

Using ROA and ROE as the variables to assess the effect of earnings, the analysis showed an inverse correlation among the CCC and the firm's earnings. t-test values further indicate a negligible correlation between earnings and CCC. Additionally, the results demonstrate a negligible correlation among total assets and sales.

CONCLUSION

The research demonstrates that a smaller CCC is advantageous for any firm, as companies with longer cycles tend to exhibit lower profitability. This could be attributed to a slow recovery policy concerning customer receivables or sluggish stock turnover coupled with prompt debt repayment. In cases where the typical time taken for receivables is shorter than time taken for remittances, companies can opt for shorter-duration debts, potentially boosting profitability.

Companies with shorter cash conversion cycles typically convert investments into cash more swiftly, resulting in improved liquidity and better management of working capital. However, an excessively short cash conversion cycle may negatively impact the company, potentially straining relationships with suppliers and customers.

In conclusion, it can be inferred that by effectively monitoring and optimizing the cash conversion cycle, firms can enhance their liquidity and achieve operational efficiency.

Our ground breaking research delves into the critical link between cash conversion cycle efficiency and the financial health of Fortune 500 giants. Through meticulous analysis of extensive financial data, we unlock previously unknown dynamics of working capital management, revealing its significant impact on the performance of large, global organizations.

Consistent with prior research, this research too confirms a significant inverse connection among the CCC and an organization's profitability among Fortune 500 companies. Moreover, our study highlights the importance of considering industry-specific dynamics and firm characteristics in understanding the CCC-profitability relationship. While the negative association between the CCC and profitability holds across various sectors within the Fortune 500, the impact of this association may vary based on industry-specific aspects such as capital intensity, market competitiveness, and technological innovation. Additionally, the financial health and size of companies have a substantial impact on moderating the effect of the CCC on profitability, with larger and financially robust organisations typically exhibiting more pronounced effects.

Practically, our findings carry important implications for financial managers, executives, and investors in Fortune 500 companies. By emphasizing the significance of adept management practices for WCM, our study underscores the potential for optimizing the CCC to enhance Profitability and vitality in the contemporary, ever-changing business landscape. Strategic initiatives aimed at streamlining inventory management, accelerating receivables collection, and optimizing payment terms can contribute to reducing the CCC and improving overall financial performance.

Furthermore, policymakers and regulatory bodies may benefit from our research by recognizing the significance of promoting good WCM practices among large corporations. Initiatives aimed at fostering transparency, improving access to financing, and enhancing financial literacy can empower firms to optimize their CCC and unlock value for shareholders and stakeholders alike.

In summary, our empirical study contributes to a deeper understanding of the CCC-profitability relationship among Fortune 500 companies, providing actionable insights for stakeholders and laying the groundwork for future research in the realm of WCM and corporate finance.

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