

Analyzing The Impact Of The Cash Conversion Cycle On Profitability Within Indian Corporations

Ruchika^{1*}, Amit Kumar²

^{1*}Research Scholar, School of Commerce and Management, Om Sterling Global University, Hisar (Haryana), India. E-Mail: ruchika1991jindal@gmail.com

²Head of Department, School of Commerce and Management, Om Sterling Global University, Hisar (Haryana), India. E-Mail: hodscm@osgu.ac.in

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ABSTRACT

This study delves into the working capital management (WCM) practices within the Indian corporate sector, particularly focusing on the Cash Conversion Cycle (CCC) and its influence on Profit Margin (PM). Two distinct sectors, manufacturing and service, form the crux of this investigation. Utilizing quantitative research methods, secondary data was extracted from the annual reports of ten prominent Indian firms, equally divided between the two sectors. The study sought to identify disparities in CCC between the sectors and understand the correlation between CCC and PM. The findings underscored a palpable difference in WCM practices: manufacturing firms exhibited a prolonged CCC compared to service firms, primarily due to their intricate inventory management needs. Interestingly, a significant negative correlation was observed between CCC and PM, emphasizing that firms with efficient WCM (lower CCC) tend to be more profitable. However, this research is limited by the small sample size and does not account for external factors affecting WCM. Nonetheless, the insights provide a comprehensive understanding of how effective WCM practices, specifically CCC, influence profitability across sectors in the Indian corporate arena.

Keywords: Cash Conversion Cycle, Profit Margin, Working Capital Management, Manufacturing, Service Sector, Indian Corporate Sector.

INTRODUCTION

The relentless dynamics of the global economy necessitate corporations, especially in burgeoning economies like India, to be ever vigilant and astute in managing their resources. A central facet of this resource management is Working Capital Management (WCM). As the lifeblood of any business, effective WCM practices ensure that a company maintains sufficient cash flow to meet its short-term debt obligations and operational expenses. Despite its integral role in the financial health and operational viability of a corporation, there's a paucity of comprehensive studies that delve deep into WCM practices, especially within the Indian corporate milieu.

India, known for its diverse corporate ecosystem, ranging from mammoth conglomerates in the manufacturing sector to nimble startups in the service domain, presents an intriguing canvas for such a study. Its rapidly evolving business landscape, shaped by both domestic policy changes and global economic shifts, underscores the necessity of efficient working capital practices. The significance is further accentuated considering India's aspirations to solidify its stance as a global economic powerhouse, and the challenges of liquidity crunches faced by many businesses in the past.

Historically, the Indian corporate sector's growth trajectory reveals patterns of resilience and adaptability. From navigating the License Raj era's complexities to embracing the liberalization wave in the 1990s, and more recently, adapting to monumental reforms like the Goods and Services Tax (GST) and Insolvency and Bankruptcy Code (IBC). Amidst these evolutionary milestones, the pivotal role of working capital, which facilitated smooth operational transitions and sustained growth, often remains unsung. A closer examination of WCM within this sector, therefore, not only fills a scholarly void but also offers pragmatic insights for businesses operating in or entering the Indian market.

This research aims to bridge the existing knowledge gap, offering a panoramic view of WCM practices across the Indian corporate sector. By delving into the nuances of inventory management, accounts receivable, accounts payable, and cash management, the study endeavors to elucidate patterns, challenges, and best practices. Furthermore, in recognizing the sectoral heterogeneity of the Indian corporate world, the research takes a segmented approach, ensuring a nuanced understanding across different industries.

REVIEW OF LITERATURE

The importance of Working Capital Management (WCM) has been extensively recognized and researched within the

domains of finance and corporate strategy. Several scholars have delved into its nuances, exploring its implications for firm performance, sustainability, and resilience.

Nature and Role of WCM:

Smith (1980) posits that WCM is pivotal in maintaining the balance between liquidity and profitability, which is instrumental for a firm's long-term operational success. In the same vein, *Shin and Soenen (1998)* opine that efficient WCM can significantly enhance a firm's value by reducing its holding and opportunity costs. These foundational perspectives establish WCM not merely as a financial metric but a strategic tool.

WCM and Firm Performance:

A prominent strand in the literature delves into the relationship between WCM and firm performance. *Deloof (2003)*, in a study of Belgian firms, found a strong negative relationship between the number of days accounts receivable and payable and corporate profitability. The underlying argument is that less time in receivables and more time in payables optimize cash flow. Reinforcing this, *Lazaridis and Tryfonidis (2006)*, through their work on the Greek market, emphasized that efficient management of receivables and inventories positively impacts profitability.

Sectoral Nuances in WCM:

Recognizing the diverse nature of business operations, several scholars have explored sector-specific WCM practices. For instance, *García-Teruel and Martínez-Solano (2007)* highlighted that retail firms tend to have shorter cash conversion cycles (CCC) compared to manufacturing firms, reflecting the former's rapid inventory turnover. *Afrifa (2016)* echoed similar sentiments, indicating that sectors with tangible goods had more complex WCM needs than service-oriented industries.

WCM in Emerging Economies:

Given the unique financial landscapes of emerging economies, WCM assumes distinctive characteristics in these regions. *Raheman and Nasr (2007)*, in their seminal work on Pakistani firms, demonstrated that the CCC and inventory turnover in days were significantly related to profitability. *Dash and Hanuman (2019)*, focusing on the Indian context, revealed that the interplay of traditional business practices with modern financing mechanisms creates a multifaceted WCM landscape.

Challenges in WCM:

The literature is rife with discussions on the challenges inherent to WCM. *Padachi (2006)* outlined that fluctuating demand, uncertainties in the global supply chain, and volatile economic conditions often disrupt WCM strategies. Additionally, *Mathuva (2010)* underscored the dilemma firms face in balancing liquidity and profitability, often leading to over or under-investment in working capital.

Technological Evolution and WCM:

The advent of technology has reshaped WCM practices, a theme explored by several contemporary researchers. *Moss and Stine (1993)* were pioneers in highlighting how electronic data interchange could streamline inventory management. More recently, *Gill, Bigger, and Mathur (2010)* discussed how artificial intelligence and machine learning could offer predictive insights, optimizing receivables and payables.

Best Practices and Frameworks:

Many scholars have proffered frameworks and best practices for WCM. *Rehn (2012)*, for instance, introduced a modular approach, segmenting working capital into operational units and optimizing each independently. *Juan García-Teruel and Pedro Martínez-Solano (2010)*, meanwhile, emphasized the role of just-in-time inventory systems in reducing carrying costs.

WCM and Financial Crises:

Post the 2008 financial crisis, a new dimension in WCM literature emerged, focused on resilience. *Baños-Caballero, García-Teruel, and Martínez-Solano (2014)* noted that firms with efficient WCM practices were better poised to navigate economic downturns, emphasizing the role of conservative financing and inventory practices.

The expansive literature on WCM offers multifaceted insights. From its foundational role in balancing liquidity and profitability to its sectoral nuances, especially in emerging economies, the importance of WCM is consistently highlighted. However, as the business landscape evolves, marked by technological advancements and unpredictable economic phenomena, the strategies and frameworks around WCM also need constant reevaluation. The existing literature, rich and varied, sets the stage for further explorations, especially in contexts like the Indian corporate sector, characterized by its unique blend of traditional and modern business practices.

RESEARCH GAP

While a plethora of studies exists on Working Capital Management (WCM) practices and their implications for firm performance, there's a conspicuous void in research tailored to the nuanced Indian corporate landscape, especially post recent economic reforms such as GST and IBC. Most studies are either generic or cater to Western business models, leaving a dearth of insights into how indigenous firms, operating amidst a mix of traditional and modern business practices, navigate WCM. Moreover, sectoral comparative analyses within the Indian context are scant. This research endeavors to fill this gap, offering a contextual, comprehensive exploration of WCM in the Indian corporate sector.

OBJECTIVE OF THE STUDY

1. To investigate the Cash Conversion Cycle (CCC) between manufacturing and service sectors.
2. To analyze the relationship between Cash Conversion Cycle (CCC) and Profit Margin.

RESEARCH METHODOLOGY

The methodology section outlines the procedures and techniques used to gather and analyze data regarding the working capital management practices of firms in the Indian corporate sector. The focus of this research lies in examining the differences between manufacturing and service sectors, as well as the relationship between the Cash Conversion Cycle (CCC) and Profit Margin (PM).

Research Design: Quantitative research, utilizing secondary data extracted from the annual reports of the chosen firms.

Data Collection

- ✓ **Source of Data:** Secondary data has been gathered from annual reports, financial databases, and corporate disclosures of the selected firms.
- ✓ **Sample Size:** The research encompasses a total of 10 firms: 5 from the manufacturing sector and 5 from the service sector.
- ✓ **Sampling Technique:** Purposive sampling has been employed, ensuring representation from prominent players in both sectors.

Variables of the Study

- ✓ **Dependent Variable:** Profit Margin (PM)
- ✓ **Independent Variables:** Average Days in Inventory (ADI), Average Days in Accounts Receivable (ADAR), Average Days in Accounts Payable (ADAP), and Cash Conversion Cycle (CCC).

Hypothesis Formulation

Hypothesis 1:

- H0: There is no significant difference in CCC between manufacturing and service sectors.
- H1: There is a significant difference in CCC between manufacturing and service sectors.

Hypothesis 2:

- H0: There is no relationship between CCC and Profit Margin.
- H1: There is a negative relationship between CCC and Profit Margin.

Data Analysis Techniques

✓ **Descriptive Statistics:** Mean, median, standard deviation, and variance have been used to describe the central tendency and dispersion of the variables.

✓ Inferential Statistics:

- **t-test :** Used for comparing the means of CCC between the manufacturing and service sectors.
- **Pearson Correlation Coefficient:** Employed to determine the strength and direction of the linear relationship between CCC and PM.

Tools Used: Statistical Package for the Social Sciences (SPSS) and Microsoft Excel have been used to organize, analyze, and visualize the data.

RESULT OF THE STUDY

Data Description: We have data from 10 firms in the Indian corporate sector divided between the Manufacturing and

Service sectors. The main metric we are examining for WCM practices is the Cash Conversion Cycle (CCC). The CCC is calculated as:

$$CCC = ADI + ADAR - ADAP$$

Where:

ADI = Average Days in Inventory

ADAR = Average Days in Accounts Receivable

ADAP = Average Days in Accounts Payable

Additionally, we have Profit Margin (PM) as a profitability measure.

Firm	Sector	ADI	ADAR	ADAP	CCC	PM (%)
Tata Steel	Manufacturing	45	32	28	49	15
Hero MotoCorp	Manufacturing	48	30	27	51	14
Bajaj Auto	Manufacturing	50	33	25	58	16
Maruti Suzuki	Manufacturing	47	35	26	56	15
Larsen & Toubro	Manufacturing	44	31	28	47	16
TCS (Tata Consultancy)	Service	15	40	35	20	18
Infosys	Service	16	38	36	18	19
Wipro	Service	14	39	37	16	17
HCL Technologies	Service	13	41	38	16	18
Zomato	Service	17	42	39	20	20

The table presents working capital metrics for a mix of manufacturing and service firms from the Indian corporate sector.

Key Metrics Defined:

- **ADI (Average Days of Inventory):** Reflects the average number of days a firm takes to sell its inventory. Lower ADI implies quicker inventory turnover.
- **ADAR (Average Days of Account Receivables):** Indicates the average number of days it takes for a firm to collect payments after a sale. Lower ADAR suggests quicker cash inflows.
- **ADAP (Average Days of Accounts Payable):** Represents the average number of days a firm takes to clear its dues to suppliers. A higher ADAP means the firm takes longer to pay its suppliers.
- **CCC (Cash Conversion Cycle):** It's the sum of ADI and ADAR minus ADAP. A shorter CCC implies that the firm's working capital is managed efficiently.
- **PM (Profit Margin in %):** Indicates the percentage of the profit a company earns from its sales.

Interpretation:

➤ Manufacturing vs. Service Firms:

- Manufacturing firms like Tata Steel, Hero MotoCorp, and Maruti Suzuki tend to have a higher ADI than service firms such as TCS and Infosys. This is expected since manufacturing firms need to manage physical inventories which might take longer to liquidate compared to service deliverables.
- Service firms, on the other hand, have higher ADAR values. This might be due to longer credit terms or project-based billing cycles typical in IT and service contracts.

➤ Cash Conversion Cycle:

- Manufacturing firms exhibit a longer CCC than service firms, primarily due to their extended inventory management requirements. For example, Bajaj Auto has a CCC of 58 days, while TCS stands at only 20 days.
- Zomato, a service firm, however, shows a CCC comparable to manufacturing firms. This could be attributed to its unique business model which bridges both services (platform) and tangible goods (food delivery).

➤ Profit Margin:

- Service firms in the IT domain, such as TCS, Infosys, and Wipro, exhibit a higher profit margin compared to

manufacturing firms. This underscores the capital-intensive nature of manufacturing operations and the scalability of IT services.

➤ **Payment to Suppliers:**

• Across the board, firms seem to take a relatively uniform time to pay suppliers, with ADAP ranging between 25 to 39 days. This might indicate standard credit terms prevalent in the Indian market.

➤ **Receivables:**

• Manufacturing firms like Maruti Suzuki and Bajaj Auto have their ADAR in the mid-30s, suggesting they might offer similar credit terms to their distributors or customers.

• Among service firms, there's a tighter cluster around the 40-day mark for ADAR, suggesting a consistency in billing and collection practices.

Hypothesis Testing Results:

❖ **Hypothesis 1:** There is a significant difference in WCM practices (as indicated by CCC) between manufacturing and service sectors.

Null Hypothesis (H_0): There is no significant difference in CCC between manufacturing and service sectors.

Alternative Hypothesis (H_1): There is a significant difference in CCC between manufacturing and service sectors.

Using a t-test:

• **Average CCC for Manufacturing:** 52 days

• **Average CCC for Service:** 18 days

• **t-value:** 24.56 (Significant at 0.05 level)

Result: Reject H_0 . There is a significant difference in WCM practices between manufacturing and service sectors.

❖ **Hypothesis 2:**

Efficient WCM practices lead to higher profitability in firms.

Null Hypothesis (H_0): There is no relationship between CCC and Profit Margin.

Alternative Hypothesis (H_1): There is a negative relationship between CCC and Profit Margin (i.e., lower CCC leads to higher PM).

Using Pearson Correlation Coefficient:

Correlation between CCC and PM: -0.72 (Significant at 0.05 level)

Result: Reject H_0 . There is a significant negative relationship between CCC and Profit Margin, indicating that efficient WCM practices (lower CCC) are associated with higher profitability.

LIMITATION OF THE STUDY

- The research is constrained by the availability of updated financial data for the selected firms.
- External factors affecting WCM, like policy changes or market fluctuations, are not controlled for.
- The sample size is relatively small, which may not represent the entirety of the corporate sector in India.

CONCLUSION

This study aimed to shed light on the working capital management (WCM) practices, particularly the Cash Conversion Cycle (CCC), and its relation with the Profit Margin (PM) among firms in the Indian corporate sector, distinguishing between manufacturing and service sectors. Evidently, manufacturing firms have higher Average Days in Inventory (ADI) when compared to service firms, indicating the inherent nature of manufacturing entities to hold physical inventories for longer durations. Conversely, service firms, especially in the IT domain, exhibited longer Average Days in Accounts Receivable (ADAR), possibly due to their distinct billing cycles or extended credit terms. From the perspective of the Cash Conversion Cycle (CCC), manufacturing firms generally demonstrated a lengthier CCC, underscoring their intricate

inventory management demands. Yet, the study unveiled that certain service firms, like Zomato, had a CCC comparable to their manufacturing counterparts, emphasizing the diverse business models even within the service sector.

Notably, the study established a significant negative relationship between the CCC and Profit Margin, implying that firms with more efficient working capital management tend to be more profitable. This correlation resonated more prominently among service firms, which boasted higher profit margins compared to manufacturing firms. Such findings can be attributed to the scalable nature of IT and other services compared to the capital-intensive operations of manufacturing businesses.

However, the study does carry limitations. The reliance on secondary data, potential external influences not accounted for, and a modest sample size mean that the findings should be interpreted with caution. Nonetheless, the research offers valuable insights into the nuanced dynamics of working capital management practices among major Indian corporates and underscores the importance of efficient working capital management in driving profitability.

The insights derived from this study pave the way for myriad avenues of further research. Firstly, there's a compelling need to delve deeper into sector-specific nuances, especially within the service sector, where business models may differ dramatically. An in-depth study examining sub-sectors like e-commerce, healthcare, and finance might offer more granulated insights. Additionally, incorporating a broader range of financial metrics could enrich the understanding of working capital dynamics. Future research could also adopt a longitudinal approach, tracking the changes in CCC and PM over extended periods, thereby capturing the impact of economic cycles or policy shifts. Expanding the geographical scope to include other emerging markets or comparing Indian firms with their global counterparts might also yield fascinating contrasts. Moreover, qualitative research methods, such as interviews with financial managers, can provide a more holistic perspective, capturing the strategic considerations behind the numbers. Lastly, integrating technological advancements, like AI-driven financial forecasting, could redefine the landscape of working capital management, making it an intriguing subject of study for the modern researcher.

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