



RESEARCH ARTICLE

Impact of Cash Conversion Cycle (CCC) on Firm Performance: Evidence from OIC and non-OIC Countries

Muhammad Imran Bhatti ^{1*}, Razali Haron ²

^{1,2} IIUM Institute of Islamic Banking & Finance (IIBF), International Islamic University Malaysia, Kuala Lumpur, Malaysia

ARTICLE INFO

Received: Sep 23, 2023

Accepted: Dec 29, 2023

Keywords

Cash conversion cycle

Firm performance

OIC countries

Non-OIC countries

*Corresponding Author:

cpa.imran@gmail.com

ABSTRACT

This research aims to examine the effect of CCC on firm performance across OIC and non-OIC nations. In this study, we employ a panel dataset of 54,725 firm-year observations from 22 OIC countries and 486,036 from 42 non-OIC countries from 2000 to 2020. The data has been collected from the Compustat database. The results were obtained through the use of regression analysis. We discover that, in OIC firms, CCC has a negative effect on firm performance, whereas, in non-OIC firms, CCC has a favorable effect on firm performance. By analyzing the effect of the cash conversion cycle on business performance among firms belonging to OIC and non-OIC countries, this study adds to the body of knowledge on working capital management. The context of OIC countries has never been examined before, which makes this study significant. Also, this study makes a comparison as to how CCC affects firm performance among firms belonging to OIC and non-OIC countries.

INTRODUCTION

Working Capital Management (WCM) theory outlines how working capital should be handled and illustrates the advantages to the firm in terms of liquidity, solvency, efficiency, profitability, and shareholder wealth maximization that flow from managing working capital properly (Brigham et al., 1999; Gitman and Vandenberg, 2000; Wasantha, 2021). Cash, credit, inventory, and accounts payable all impact liquidity since they are part of a company's overall cash flow (Maness, 1994; Hashmi and Iqbal, 2022). A company's liquidity is jeopardized if it contemplates lowering its cash levels by carrying too many goods or giving out too much credit. If declining cash levels are addressed, the firm may avoid insolvency and bankruptcy when its obligations

surpass its assets (Gitman and Vandenberg, 2000; Dierks and Patel, 1997; Nabila and Mat, 2021).

Keynes (1936) started the concept, which became the dominant theory for formulating WCM. According to this hypothesis, investors choose liquid investments over illiquid assets when all other factors remain constant. And so attempt to profit from investments with a long maturity time. Thus, liquidity is the decision to have cash in hand. A company may need to have cash on hand for various reasons at any one moment (Bitrus, 2011; Othuon, 2021). According to this idea, businesses keep currency for operational, anticipatory, preventive, and remedial purposes. Transactional motivation is the firm's desire to keep cash on hand to satisfy ongoing commercial transactions. They require such cash to cover expenses like transportation, raw supplies,

labor, etc. Precautionary cash holding aims to have funds on hand in an unanticipated emergency.

Many businesses lay aside funds to be used in tough times or to gain from unforeseen activity. The ability to maintain liquid assets to profit from future interest and bond price fluctuations is referred to as anticipatory purposes (Pandey and Perera, 1997; Victor, 2021). This idea is relevant in the current investigation since the role of liquidity in funding everyday company activities cannot be assumed. Listed firm managers are expected to keep working capital levels at suitable levels to accomplish the business's objectives, which is crucial to maximizing shareholder value. Despite this, the theory needs to explain how WCM impacts dividend payout. However, businesses would be encouraged to issue dividends if the target working capital management is met. Excess liquidity, conversely, results in investment losses; hence, businesses should strive to reduce overall liquidity and illiquidity costs. As a result, the goal of WCM is the improvement of liquidity and firm performance (Pandey and Perera, 1997; Korve, 2022). This study is a step in that direction. This study advances the working capital literature by examining the relationship between the cash conversion cycle and firm performance across OIC countries. It is pertinent to mention that no study has examined this phenomenon in OIC countries. This study also tries to bridge the gap in the literature by comparing how CCC affects firm performance among firms belonging to OIC and non-OIC countries. There were no studies on the non-financial firms of OIC countries' data sets and only a few additional studies on the GCC, Middle East, and MENA in the context of working capital management.

LITERATURE REVIEW

Components of working capital management

Working Capital Management (WCM) is involved in various levels of interaction, both internally and externally, and is not confined to internal interaction (Brigham et al., 2008). The four key WCM components, as mentioned in the literature, include cash, inventory, payables, and receivables management. A company's cash holdings operate as a buffer for its operations, enabling it to finance them in a manner suitable for its business cycle (Boisjoly,

2009; Gitman, 2006; Li et al., 2022). The difficulty in cash management is to minimize the opportunity cost of holding excessive amounts of these resources while maintaining the right balance between cash and marketable securities. The business cycle impacts the integrative approach to cash management, and modifications to this strategy directly affect working capital performance (Boisjoly, 2009; Mazanec, 2022). Maintaining cash balance requires a variety of tasks; thus, creating a cash management plan that incorporates cash budgeting and forecasting to synchronize cash inflows and outflows should be considered a core capability of a business. Cash planning includes anticipated cash inflows, outflows, and the cash balance over time (Moyer et al., 2006; Lofton, 2021; Gill et al., 2022). A cash budget is a helpful tool for managers who wish to maintain a specific amount of liquidity. Managers' ability to achieve and maintain liquidity depends on their understanding of the business cycle. As part of cash forecasting, estimate the amount required for daily, weekly, monthly, or yearly operations. A manager's ability to predict cash surpluses or shortages gives finance managers enough time to look for other funding sources or invest in marketable securities (Moyer et al., 2006; Deari et al., 2022).

The second element, as discussed, is inventory management, which is crucial in purchasing, manufacturing, and selling goods and services (Crum et al., 1983; Sawarni et al., 2022). Moreover, keeping appropriate stock levels requires paying for inventory-related expenses, including ordering, hauling, and stocking out, and is a business cycle component (Moyer et al., 2006; Liu et al., 2021). Ordering costs include all expenses related to placing orders and delivering supplies to the warehouse. All expenses related to keeping things in storage for a predetermined period are referred to as "carrying costs." The length of time it takes to hold inventory increases with carrying costs. Stock-out costs encompass all expenses resulting from a scenario where demand exceeds available inventory. Inventory management includes the costs of stocking marketplaces and placing new orders for supplies. The inventory management strategy directly impacts the working capital performance (Yang et al., 2005; Liu et al., 2021). Although overstocking inventory

reduces the likelihood of "stock-out" shortages, it can also lead to high carrying costs. How efficiently a company manages its inventory and how quickly suppliers provide supplies for production, sales, or services determines how responsive the company can be to market demands. Therefore, stronger ties with suppliers are crucial for organizations to manage changing market demands (Bowersox et al., 2003; Oh and Kim, 2022).

Accounts payable, one of the most popular sources of sporadic funding, is the third element of WCM (Gitman, 2006; Hill and Sartoris, 1988; Moyer et al., 2006, Alkhataybeh, 2021). Businesses and suppliers must agree to establish a partnership or connection on certain conditions, such as credit terms (Hill and Sartoris, 1988; Abbas et al., 2018). Credit terms include payment conditions, credit period, credit guarantee, and cash discount (Gitman and Vandenberg, 2000; Moyer et al., 2006; Weerasekara, 2021). A credit term is a time frame that establishes the number of days that suppliers may expect to get paid. Cash discounts are incentives for early payments expressed as percentages. A company is entitled to a discount if payment is made during the discount period; however, this term depends on the suppliers' credit conditions and is not always available. Sometimes, a customer could be required to provide a credit guarantee from a financial institution (Purwatiningsih et al., 2022). This often occurs when there is a significant risk of credit default or when suppliers have concerns over a customer's creditworthiness. Suppliers are entitled to a credit guarantee to pay late debts in the case of credit default. This agreement is contingent upon the credit conditions of suppliers and is not invariably enforced. In several instances, credit terms must be clearly specified and instead depend on credit agreements between businesses and suppliers. The business will pay extra short-term financing costs if payments are not made by the deadline or until after it has passed. While this gives corporate operations a financial buffer, it can also harm the company's credit history; cash discount savings are lost, and a stable financial supply chain is compromised (Brigham et al., 2008; Moyer et al., 2006; Sawarni et al., 2022). Conversely, credit sales given to clients in exchange for goods or services are known as accounts receivable.

Credit policy and collection practices significantly impact the management of accounts receivable (the fourth component) (Brigham et al., 2008; Moyer et al., 2006; Oktavia et al., 2021). Credit rules and collection techniques impact sales, cash inflows, and the probability of bad loans (Hill and Sartoris, 1988; Gill et al., 2022). Changes in credit policy will have a direct impact on working capital performance. For instance, management's decision to increase or decrease the credit period impacts the cash conversion cycle. A credit policy often includes monetary discounts, terms, and standards (Gitman, 2006; Moyer et al., 2006; Rijal, 2016; Gill et al., 2022). Credit standards provide the guidelines for determining a customer's creditworthiness based on their credit history. Customers have a specific time to pay their debts within the credit period. Cash discounts are financial rewards offered to customers for paying early during the discount period; however, this choice might not be available based on the business's credit policy. Reducing the amount of time required to recover unpaid receivables is the aim of collection methods. A demand letter, follow-up calls, employing a collection agency, and filing a lawsuit are a few examples of collection measures that may be taken. The collection processes used by various businesses may vary depending on the quantity and value of receivables (Moyer et al., 2006; Ahmed, 2022). It is clear that managing working capital components is ingrained in regularly scheduled corporate operations and includes involvement from all organizational levels (Gitman, 2006). According to the reasoning, synchronizing WCM components may be part of some organizations' ongoing business operations to improve organizational performance. For instance, businesses order goods ahead of time (inventory management) and pay for them (payable management) before receiving funds (cash management). Because of the nature of the operational activity, cash flows are neither immediate nor coordinated. Because of this, deciding how much working capital to invest is becoming increasingly difficult. In certain businesses, working capital transactions are also much more complicated, and management of WCM components is distributed across the whole organization.

The cash conversion cycle

The theoretical framework of this study would be the Cash Conversion Cycle (CCC). This proposed study would be grounded on the WC theory, which demonstrates that when Current Assets (CA) exceed Current Liabilities (CL), firms can use the "surplus" to create investments from the "fund source" and generate daily cash levels to meet disbursement and current obligations (Laux, 2012; El-Maude and Shuaib, 2016; Sah, 2021). In 1955, Sagan, the pioneering architect behind the WC theory, observed that the efficient management of WC resulted in healthy financial structures for organizations. Nonetheless, Gitman (1974) first proposed the concept of the cash cycle, and Richards and Laughlin (1980) provided a thorough explanation of it using the acronym CCC (Cash Conversion Cycle). It is the total of the Accounts Receivable (RECD) and Inventory (INVD) Periods after the Accounts Payable (PAYD) period.

CCC and firm performance

The cash conversion cycle hypothesis, Richards and Laughlin (1980), explains how businesses should ensure a shorter operations cycle to avoid the adverse effects of subpar working capital management (Jaworski and Czerwonka, 2022). Thus, the average time between a company's inventory acquisition and the cash receipt from its accounts receivable is measured. The cash conversion cycle hypothesis is a useful tool manager may use to predict how much cash a corporation will have left over for operations. A more efficient WCM might result in a shorter CCC, which could result in better profits (Richards and Laughlin, 1980; Kundu et al., 2022). CCC mainly focuses on optimizing WCM components (Weinraub and Visscher, 1998; Mazanec, 2022).

As denoted by Kabuye et al. (2019), the cash conversion cycle tends to be stretched due to a few reasons, like extended time in collecting accounts receivable, a higher level of inventory, or rapidness in clearing outstanding bills. In this case, a longer cash conversion cycle indicates that the business is insolvent since it takes longer to create cash. When a company has a shorter frequency of recovering overdue payments and accurately predicts inventory requirements, or when it settles its invoices gradually, these actions reduce the cash conversion cycle (Aminu and Zainudin, 2015; Iqbal et al., 2022). As a result,

a lower cash conversion cycle implies the business is in better condition. Therefore, any extra money made might be used to pay down debt or make new purchases. The basic theory that explains working capital management about all concepts and elements, from raw materials to completed goods and outputs displaying inventory levels, as well as receivables, payment, and the cash conversion cycle, is known as the cash conversion cycle theory.

From the literature mentioned above, studies have found a positive or negative relationship between CCC and firm performance. Therefore, a reconciliation of these findings by using a large sample is a must. Also, we find that these studies have been conducted on samples from developed countries, and only a few developing countries have been examined. Therefore, this study tries to examine this phenomenon in samples from OIC countries. Further, this study also tries to reconcile the previous findings by examining how CCC affects firm performance among firms belonging to OIC and non-OIC countries.

RESEARCH METHODOLOGY

Data and data sources

To conduct this analysis, we used a panel dataset with 54,725 firm-year observations from 22 OIC nations and 486,036 from 42 non-OIC countries between 2000 and 2020. The data was gathered from the Compustat database, one of the popular databases used worldwide for firm-level analysis. It is pertinent to mention that the selection of 22 OIC countries and 42 non-OIC countries was made based on data availability in the Compustat database. The data for the study variables was available for only these countries; hence, they formed the sample.

Due to the benefits of the panel data approach, it was used to estimate the models mentioned above. First, panel data lets us account for unobservable heterogeneity since it assumes that people are diverse (Hsiao, 2003; Baltagi and Baltagi, 2021; Kumpamool and Chancharat, 2022). Specifically, studies that use time series and cross-sections are prone to producing biased results because they need to account for individual variability (Moulton, 1986; Oganda, 2022; Jam et al., 2011). Second, panel data increases efficiency, generates variability, offers more information, and lessens

the collinearity across variables (Hsiao, 2003; Gyane et al., 2021). Thirdly, panel data is useful for researching adjustment processes (Baltagi and Baltagi, 2021). According to Baltagi and Baltagi (2021), cross-sectional distributions appear steady but frequently conceal significant variation. Finally, it facilitates the construction of complex models, which aids in improving the modeling of technological efficiency (Altaf and Shah, 2021; Izhar et al., 2016). To reduce measurement error and improve the study's reliability, a 20-year time frame was selected. According to Chadha and Sharma (2015), data spanning a more prolonged time ensures dependability and lower measurement error. It is important to remember that before moving on to the final analysis, we cleaned the data.

Variables used in the study

The following variables have been employed in this investigation: The ratio of net profit to total assets has been used to measure Firm Performance (FP). The Accounts Payable Period (APP) is deducted from the total of the Inventory Conversion Period (ICP) and Accounts Receivable Period (ARP) to get the Cash Conversion Cycle (CCC). Additionally, we measure the following control variables for this study: firm size (SIZE) as a logarithm of total assets; age of the firm (AGE) as the number of years since incorporation; growth opportunities (GROW) as year-over-year growth in sales; and tangible fixed assets (TAN) as tangible fixed assets to total assets. Leverage (LEV) is the ratio of total debt to total assets.

Model and estimation approach

$$FP_{i,t} = \beta_0 + CCC_{i,t} + \gamma_{i,t} + \epsilon \quad (1)$$

Where $FP_{i,t}$ is the firm performance, $CCC_{i,t}$ is the cash conversion cycle, and $\gamma_{i,t}$ are the set of control variables affecting firm performance. All regressions include firm and country-fixed effects to reduce the effects that alternative channels may infuse. Further, we have used robust estimation and clustered the standard errors at the firm level in all regressions (Petersen and Rajan, 2009).

RESULTS AND DISCUSSION

The descriptive data for firm-level variables across OIC and non-OIC countries are exhibited in Table 1. Descriptive statistics for OIC nations are presented in Panel A of the table, whereas descriptive statistics for non-OIC countries are presented in Panel B. According to the data in the table, the mean CCC for businesses in OIC nations is 105 days. In contrast, it is 84 days in non-OIC nations, suggesting that non-OIC nations rotate their working capital cycle more quickly than OIC nations. Additionally, it means businesses tend to have a stricter working capital strategy in non-OIC business environments than in OIC business environments. The profitability variable's mean value for OIC nations is 0.29, whereas it is 0.37 for non-OIC countries, suggesting that non-OIC country enterprises are more profitable than OIC country firms.

Table 1: Descriptive statistics of firm-level variables

| Panel A: Descriptive statistics of firms from OIC countries | | | | | |
|---|-------|--------|------|-------|-------|
| | MEAN | MEDIAN | SD | MIN | MAX |
| CCC | 105 | 100 | 2.87 | 88 | 132 |
| PROF | 0.29 | 0.23 | 3.18 | 0.09 | 0.39 |
| LEV | 0.21 | 0.18 | 1.99 | 0.01 | 0.32 |
| GROW | 0.52 | 0.47 | 2.88 | 0.31 | 0.73 |
| SIZE | 1.87 | 1.82 | 3.29 | 0.98 | 2.11 |
| AGE | 20.17 | 18.73 | 4.14 | 10.09 | 35.87 |
| TAN | 0.21 | 0.29 | 2.07 | 0.1 | 0.34 |
| Panel B: Descriptive statistics of firms from non-OIC countries | | | | | |
| CCC | 84 | 72 | 3.14 | 52 | 97 |
| PROF | 0.37 | 0.36 | 3.17 | 0.12 | 0.48 |
| LEV | 0.34 | 0.32 | 3.88 | 0.09 | 0.44 |
| GROW | 0.35 | 0.3 | 3.19 | 0.27 | 0.54 |
| SIZE | 3.18 | 3.1 | 4.19 | 2.76 | 4.23 |
| AGE | 39.18 | 33.13 | 5.13 | 23.1 | 45.13 |
| TAN | 0.29 | 0.31 | 2.53 | 0.16 | 0.49 |

We discover that the average level of leverage in OIC country enterprises is 0.21, but it is 0.34 in non-OIC country firms, indicating that non-OIC country firms use more debt than OIC country firms do. Additionally, we discover that the mean growth rate of businesses in OIC nations is 0.52. In contrast, it is 0.35 for businesses in non-OIC countries, suggesting that OIC countries are growing faster than non-OIC countries. Additionally, we discover that the mean firm size for OIC nations is 1.87, whereas the mean firm size for non-OIC countries is 3.18, indicating that non-OIC countries have substantially larger enterprises than OIC countries. Regarding asset tangibility, the mean score for businesses in OIC countries is 0.21. In contrast, it is 0.29 for businesses in non-OIC countries, indicating that non-OIC businesses are more tangible than OIC businesses.

Table 2 presents the results of Eq. (1) for firms from OIC countries. Specifically, Eq. (1) tests the relation between CCC and firm performance in firms belonging to OIC countries. It is worth noting that column (2) of the table includes only firm-fixed effects, column (3) of the table includes country-fixed effects, and column (4) of the table includes both firm-fixed and country-fixed effects.

In all the columns of the table, we discover that the coefficient on the CCC variable is negative at a significant 5 percent level of significance, implying that reducing CCC will tend to increase firm performance among firms belonging to OIC countries.

These results imply that firms in OIC countries should follow tighter working capital policies to improve performance. These results can be explained in light of the lack of financial development in OIC countries, which hinders firms' ability to procure external finances. As a result, firms are forced to adopt tighter working capital policies. Also, a lack of financial development causes firms to rely heavily on short-term credit as a source of finance for working capital since external finance is comparatively expensive. Since the obligations generated by short-term credit need to be financed regularly, firms need to follow a tighter CCC that would release cash flows. These cash flows can be utilized to run the day-to-day operations of a company, which would further reduce financing costs. In addition, the released funds can be utilized for early payments to suppliers, allowing a firm to take advantage of discounts for quick payments.

Further, in all the table columns, we find that leverage has a significant negative impact on firm performance, implying that as firms in OIC countries tend to increase leverage, firm performance will decline. We find that the coefficient on the growth variable is positive and significant at a 1 percent level of significance, implying that firm performance will also improve as firms in OIC countries tend to grow. Further, we find that the coefficient on the firm's size variable is positive and significant at a 5 percent significance level, implying that a larger firm size tends to be a favorable indicator of firm performance.

Table 2: Impact of CCC on firm performance of firms in OIC countries

| | 1 | 2 | 3 | 4 |
|---------------|---|---------------------|---------------------|---------------------|
| CCC | | -0.191** (-2.03) | -0.193** (-1.97) | -0.197** (-2.01) |
| LEV | | -0.141* (-2.73) | -0.147* (-2.69) | -0.143* (-2.68) |
| GROW | | 0.003* -2.54 | 0.003* -2.59 | 0.002* -2.58 |
| SIZE | | 0.134** -1.97 | 0.133** -2.01 | 0.134** -2.03 |
| AGE | | -0.139** (-2.04) | -0.132** (-2.03) | -0.138** (-2.09) |
| TAN | | 0.001* -3.08 | 0.001* -3.01 | 0.002* -3.03 |
| Fixed Effects | | | | |
| Firm | | Yes | No | Yes |
| Country | | No | Yes | Yes |

Asterisks indicate significant at 1 percent (*), 5 percent (**), 10 percent (***)

We find that the coefficient on the age variable is negative and significant at a 5 percent level of significance, implying that as firms in OIC countries grow older, the firm's performance tends to decline. Further, tangibility is a significant positive predictor of firm performance among firms belonging to OIC countries.

Table 3 presents the results of Eq. (1) for firms from OIC countries. Specifically, Eq. (1) tests the relationship between CCC and firm performance among firms belonging to non-OIC countries. Column (2) of the table includes only firm-fixed effects; column (3) includes country-fixed effects, and column (4) includes both firm and country-fixed effects.

In all the table columns, we find that the coefficient on the CCC variable is positive and significant at a 1 percent significance level, implying that increasing CCC will tend to increase firm performance among firms in non-OIC countries. These results imply that firms in non-OIC countries should follow relaxed working capital policies to improve performance. These results are opposite those of firms in OIC countries, where we find that adopting tighter working capital policies improves firm performance. Plausible reasons can be ascribed to the above phenomenon. For instance, firms in non-OIC countries rely heavily on external finances because the financial markets in these countries are relatively developed compared to the financial markets in OIC countries. Financing in non-OIC countries is easier and cheaper than in OIC countries. Firms in these countries rely

heavily on long-term funds, which lengthens the CCC, causing a lot of funds to still need to be blocked. These blocked funds can finance buffer inventories that help keep sales smooth and increase profitability.

Further, in all the table columns, we find that leverage has a significant negative impact on firm performance, implying that as firms in non-OIC countries tend to increase leverage, firm performance will decline. These results are similar to those of firms in OIC countries. We find that the coefficient on the growth variable is positive and significant at a 5 percent level of significance, implying that the growth of firms tends to increase the performance of firms in non-OIC countries. Similar results were also found for firms in OIC countries.

Further, we find that the coefficient on the firm's size variable is negative and significant at a 5 percent level of significance, implying that performance tends to decrease as firms increase in size. This may be because larger firms are difficult to manage. These results contradict what we found for firms in OIC countries. We find that the coefficient on the age variable is positive and significant at a 5 percent level of significance, implying that experience plays a key role in improving the performance of firms in non-OIC countries, which is again different from what we found for OIC firms. Further, about tangibility, we find that tangibility is a significant positive predictor of firm performance among firms belonging to non-OIC countries.

Table 3: Impact of CCC on firm performance of firms in non-OIC countries

| | 1 | 2 | 3 | 4 |
|---------------|---|----------|----------|----------|
| CCC | | 0.647* | 0.610** | 0.613** |
| LEV | | -3.17 | -3.09 | -3.06 |
| | | -0.110** | -0.119*(| -0.116** |
| | | (-2.03) | (-2.04) | (-2.05) |
| GROW | | 0.135** | 0.139** | 0.131** |
| | | -2.11 | -2.15 | -2.19 |
| SIZE | | -0.042** | -0.041** | -0.045** |
| | | (-1.99) | (-2.02) | (-2.07) |
| AGE | | 0.137** | 0.132** | 0.139** |
| | | -2.07 | -2.09 | -2.1 |
| TAN | | 2.11* | 2.17* | 2.15* |
| | | -2.94 | -2.97 | -2.13 |
| Fixed Effects | | | | |
| Firm | | Yes | No | Yes |
| Country | | No | Yes | Yes |

Asterisks indicate significant at 1 percent (*), 5 percent (**), 10 percent (***)

Our results confirm that CCC has a negative impact on firm performance in firms belonging to OIC countries. This is consistent with the findings of previous studies that have examined the relationship between CCC and firm performance in developing countries or emerging markets, such as Aminu and Zainudin (2015), and Kabuye et al. (2019). These studies suggest that firms in developing countries or emerging markets face financial constraints and high financing costs, which force them to adopt tighter working capital policies to improve liquidity and profitability. However, our results also show that CCC has a positive impact on firm performance in firms belonging to non-OIC countries. This is in contrast with the findings of previous studies that have examined the relationship between CCC and firm performance in developed countries or advanced markets, such as Weinraub and Visscher (1998), Petersen and Rajan (1997), and Kumpamool and Chancharat (2022). These studies suggest that firms in developed countries or advanced markets have access to well-developed financial markets and low financing costs, which allow them to adopt relaxed working capital policies to exploit growth opportunities and enhance firm value. Therefore, our results indicate that the impact of CCC on firm performance varies across different institutional contexts and business environments.

CONCLUSION

The study aimed to explore the impact of CCC on firm performance in firms belonging to OIC and non-OIC countries. We employed a panel dataset of 54,725 firm-year observations from 22 OIC countries and 486,036 from 42 non-OIC countries from 2000 to 2020. Our results confirm that CCC has a negative impact on firm performance in firms belonging to OIC countries. However, CCC has a positive impact on firm performance in firms belonging to non-OIC countries. We find that CCC has a negative impact on firm performance in firms belonging to OIC countries, implying that they should follow tighter working capital policies to improve performance. However, CCC positively impacts firm performance in non-OIC countries, implying that they should follow relaxed working capital policies to enhance performance. We also find that leverage, growth, size, age, and tangibility significantly affect firm performance in

both groups of countries. Our research contributes to the literature on working capital management by comparing the effect of CCC on firm performance among firms belonging to OIC and non-OIC countries, which has yet to be done.

Several inferences can be drawn from these results. Firstly, it suggests that firms operating in OIC countries need to pursue more aggressive working capital policies by shortening their cash conversion cycles through reduced receivables periods, leaner inventories, and timely payments to suppliers. The institutional frictions constraining financing options for OIC firms mean that locking working capital in operational cycles hampers their profitability. In contrast, firms in more developed non-OIC countries have greater flexibility in managing their CCC without impacting financial performance. Access to sophisticated financial systems allows these firms to sustain a longer CCC if the operating benefits exceed the cost of financing. The findings imply that generic, one-size-fits-all prescriptions regarding optimal working capital management may be suboptimal across heterogeneous country settings. Managers must design tailored strategies that consider the institutional financial infrastructure and the prevailing competitive conditions in their respective markets. Finally, it highlights the risks of relying extensively on trade credit, which, although it facilitates transactions, can significantly expose vulnerable firms to liquidity shortfalls when the economic environment tightens. Having robust cash management policies provides a cushion against such credit risks. In summary, this research moves the focus to an understudied area of cross-country variations in working capital-performance relationships, generating policy insights for practitioners while setting the agenda for scholars to further investigate the contingencies that enable high-performing working capital strategies suitable for different business ecosystems.

Theoretical implications

This study makes several important theoretical contributions. Firstly, it expands the working capital literature by providing novel evidence on the differential impacts of the cash conversion cycle (CCC) on firm performance across OIC and non-OIC settings. The findings enrich theoretical understanding

regarding optimal working capital policies amid varying institutional conditions. Second, it focuses on the factors affecting the CCC and performance relationship. This differs from traditional theories that assume general management rules work similarly in all economic situations. The results underscore the need to incorporate country-specific structural factors while modeling the linkages between working capital drivers and profitability. Lastly, the fact that the evidence is different across country groups makes it more important to make more theoretical progress in figuring out what specific institutional financial factors allow or prevent companies from using flexible working capital strategies without hurting their ability to compete. These can pave the way for more context-specific, nuanced theories in the discipline.

Practical implications

The research also offers valuable practical implications. The findings should guide managers in OIC countries to pursue aggressive working capital cycles with shorter cash conversion periods to avoid liquidity strains that can paralyze operations and dilute profit margins during challenging times. Developing capacities for accurate sales forecasting and lean inventory norms should be prioritized. For non-OIC country firms, following tailored strategies aligned with their operating environments takes precedence over conventionally prescribed best practices. Managers can utilize increased access to diverse financing sources in these markets to balance the trade-off between optimizing inventory, receivables, and payables cycles on the one hand and minimizing financing costs on the other. Finally, the results caution against over-reliance on supplier credit without shoring up cash reserves. Strategic cash buffers can prove vital, especially for emerging firms facing exogenous shocks. Overall, this research can promote positive changes in working capital governance through an enhanced CCC orientation. These results imply that firms in OIC countries should follow tighter working capital policies, whereas firms in non-OIC countries should follow a relaxed working capital policy. These results have implications for financing as well. If firms in OIC countries need tighter working capital policies, they will be able to release cash and need a lower amount of finance than firms in non-OIC countries.

The study attempted to understand how CCC affects firm performance in OIC and non-OIC firms. We acknowledge that, due to the non-availability of data for some countries, all the countries could not be investigated. The research also suggests that future research can focus on this phenomenon. Also, in this study, only CCC has been used as a variable for working capital efficiency. Future research can focus on incorporating working capital sub-dimensions as variables and studying their relationship with firm performance.

REFERENCES

- Abbas FJ, Nobanee H, Khan M, Varas J; 2018. The impact of practices in working capital management and supply chain management on corporate performance. *International Journal of Business*, 23(4):383.
- Ahmed AY; 2022. Working capital management and financial performance of small and medium enterprises in Garissa County, Kenya. PhD thesis, KENYATTA UNIVERSITY.
- Alkhataybeh A; 2021. Working capital and R&D smoothing: Evidence from the Tel Aviv stock exchange. *Journal of Applied Economics*, 24(1):91-102.
- Altaf N, Shah FA; 2018. Investment and financial constraints in Indian firms: Does working capital smoothen fixed investment?. *Decision*, 45:43-58.
- Aminu Y, Zainudin N; 2015. A review of anatomy of working capital management theories and the relevant linkages to working capital components: A theoretical building approach. *European Journal of Business and Management*, 7(2):10-18.
- Baltagi BH, Baltagi BH; 2021. Test of hypotheses with panel data. *Econometric Analysis of Panel Data*, p. 75-108.
- Bitrus YP; 2011. The determinants of the demand for money in developed and developing countries. *Journal of Economics and International Finance*, 3(15):771.
- Boisjoly RP; 2009. The cash flow implications of managing working capital and capital

- investment. *The Journal of Business and Economic Studies*, 15(1):98.
- Bowersox DJ, Closs DJ, Stank TP; 2003. How to master cross-enterprise collaboration. *Supply Chain Management Review*, 7(4):18-27.
- Brigham EF, Ehrhardt MC, Madura J; 2008. *Financial Management Theory and Practice*. Thomson: South-Western.
- Brigham EF, Gapenski LC, Daves P, Intermediate *Financial Management*. The Dryden Press. Harcourt Brace College Publishers; 1999.
- Chadha S, Sharma AK; 2015. Determinants of capital structure: an empirical evaluation from India. *Journal of Advances in Management Research*, 12(1):3-14.
- Crum RL, Klingman DD, Tavis LA; 1983. An operational approach to integrated working capital planning. *Journal of Economics and Business*, 35(3-4):343-378.
- Deari F, Kukeli A, Barbuta-Misu N, Virlanuta FO; 2022. Does working capital management affect firm profitability? Evidence from European Union countries. *Journal of Economic and Administrative Sciences*.
- Dierks PA, Patel A; 1997. What is EVA, and how can it help your company?. *Strategic Finance*, 79(5):52.
- El-Maude JG, Shuaib AI; 2016. Empirical Examination of the Association of Working Capital Management and Firms' profitability of the Listed Food and Beverages Firms in Nigeria. *Researchers World*, 7(1):12.
- Gill SS, Xu M, Ottaviani C, Patros P, Bahsoon R, Shaghghi A, et al.; 2022. AI for next generation computing: Emerging trends and future directions. *Internet of Things*, 19:100514.
- Gitman LJ; 1974. Estimating corporate liquidity requirements: a simplified approach. *Financial Review*, 9(1):79-88.
- Gitman LJ; 2006. *Introduction to managerial finance*. Researchsp.
- Gitman LJ, Vandenberg PA; 2000. Cost of capital techniques used by major US firms: 1997 vs. 1980. *Financial Practice and Education*, 10:53-68.
- Gyane AT, Nunoo EK, Suleman S, Essandoh-Yeddu J; 2021. Sustaining oil and gas multinational operations through corporate social responsibility practices. *Discover Sustainability*, 2:1-12.
- Hashmi MA, Iqbal MS; 2022. Impact of working capital management on firm profitability and liquidity: the moderating role of family ownership. *Accounting Research Journal*, 35(5):676-697.
- Hill NC, Sartoris WL; 1988. *Short-term financial management*. Macmillan.
- Hsiao C; 2022. *Analysis of panel data*. No. 64, Cambridge university press.
- Iqbal A, Khan MI, Khan J; 2022. Investors' Perception About Cash Conversion Cycle When Valuing Firm (A study of Textile Sector of Pakistan Stock Exchange).. *KASBIT Business Journal*, 15(1).
- Izhar TAT, Baharuddin MF, Mohamad AN, Ramli AAM, Shoid MSM, Hasnol WMHW; 2016. Using ontology for goal-based query to evaluate social media data. *Journal of Advances in Humanities and Social Sciences*, 2(2):108-118.
- Jam FA, Haq IU, Fatima T; 2011. Psychological contract and job outcomes: Mediating role of affective commitment. In: 1st International Technology, Education and Environment Conference .
- Jaworski J, Czerwonka L; 2022. Which Determinants Matter for Working Capital Management in Energy Industry? The Case of European Union Economy. *Energies*, 15(9):3030.
- Kabuye F, Kato J, Akugizibwe I, Bugambiro N; 2019. Internal control systems, working capital management and financial performance of supermarkets. *Cogent Business & Management*.
- Keynes JM; 1937. *The general theory of employment*. *The Quarterly Journal of Economics*, 51(2):209-223.

- Korve VS; 2022. Impact of Working Capital Management on Profitability of Quoted Manufacturing Firms in Nigeria. 7(1).
- Kumpamool C, Chancharat N; 2022. Does board composition influence working capital management? Evidence from Thailand. *Corporate Governance: The international journal of business in society*, 22(6):1178-1196.
- Kundu S, Quddus K, Jagannath Sharma N; 2022. Does halo effect of innovative firms moderate the impact of working capital efficiency on firm value? Evidence from India. *Cogent Economics & Finance*, 10(1):2068240.
- Laux JA; 2012. *Topics in Finance: Part IX—Working Capital Management*. .
- Li Z, Jiang J, Xia L, Chu CC, et al.; 2022. Empirical research on the relationship between industry working capital shortfall and company cash holding in the same industry. *Discrete Dynamics in Nature and Society*, 2022.
- Liu H, Pan JX, Yuan HQ, Li HL, Wang J, Wang JJ, et al.; 2021. Research on Evaluation of Working Capital Management Efficiency of Electric Power Listed Companies. In: *E3S Web of Conferences*, vol. 251 EDP Sciences p. 01095.
- Lofton ML; 2021. What Influences Working Capital Management? A Survey of New York Local Government Financial Officers.. *Municipal Finance Journal*, 41(4).
- Maness TS; 1994. The cash-flow timeline and the credit manager. *Business credit-New York*, 96:10-10.
- Mazanec J; 2022. The impact of working capital management on corporate performance in small-medium enterprises in the visegrad group. *Mathematics*, 10(6):951.
- Moulton BR; 1986. Random group effects and the precision of regression estimates. *Journal of econometrics*, 32(3):385-397.
- Moyer RC, McGuigan JR, Kretlow WJ; 2006. *Contemporary Financial Management*. Thomson/South-Western.
- Nabila MA, Mat S; 2021. Effects of working capital management, solvency, and profitability on bankruptcy risk (Cade: Property Sector in Indonesia Stock Exchange). *International Journal of Accounting*, 6(32):197-208.
- Oganda AJ.; 2022. *Financing Structure and Financial Performance of Listed Manufacturing Firms on Nairobi Securities Exchange, Kenya: A Dynamic Panel Approach (PhD thesis)*. PhD thesis, Jaramogi Oginga Odinga University of Science and Technology, Bondo, Kenya.
- Oh K, Kim D; 2022. Profile Deviation Analysis of Global Firms' Working Capital Management in the Automotive Industry During the Financial Crisis and Recovery Periods. *Computer and Information Science 2021-Fall 21*, p. 27-37.
- Oktavia D, Indrati M, et al.; 2021. Effect Of Receivables, Inventories, and Payables On Working Capital. *Journal Research of Social, Science, Economics, and Management*, 1(2):101-115.
- Othuon DO.; 2021. *Working Capital Management, Asset Base, Board Diversity and Financial Performance of Coffee Wet Mills in Embu County, Kenya*. PhD thesis, University of Embu.
- Pandey I, Perera K; 1997. *Working Capital Management in Sri Lanka (Working Paper)*. Indian Institute of Management, Ahmedabad, India.
- Petersen MA, Rajan RG; 1997. Trade credit: theories and evidence. *The review of financial studies*, 10(3):661-691.
- Purwatiningsih A, Suprayitno A, Haryono A; 2022. Assessment of MSMEs Working Capital Loans at Bank Mandiri Malang Branch, Indonesia. *International Journal of Research in Social Science and Humanities (IJRSS) ISSN: 2582-6220, DOI: 10.47505/IJRSS*, 3(1):13-25.
- Richards VD, Laughlin EJ; 1980. A cash conversion cycle approach to liquidity analysis. *Financial management*, p. 32-38.
- Rijal S; 2016. The influence of transformational leadership and organizational culture on learning organization: A comparative analysis of

- the IT sector, Thailand. *Journal of Administrative and Business Studies*, 2(3):121-129.
- Sah GG; 2021. Impact of working capital management on the profitability of smes through cash operation cycles in Kumasi. *The Challenges of Analyzing Social and Economic Processes in the 21 st Century*, p. 112.
- Sawarni KS, Narayanasamy S, Chattopadhyay S, Chakrabarti P; 2022. Working capital management, financial performance and growth of firms: empirical evidence from India. *Journal of Indian Business Research*, 14(4):361-381.
- Victor OO; 2021. Working Capital Management And Financial Performance Of Deposit-Taking Microfinance Institutions In Mombasa County, Kenya. *Kenyatta University Institutional Repository*.
- Wasantha S; 2021. A Comparative Study of Working Capital Management Practices: A Case Study of Ethiopia with, Australia, Canada, United States. *British International Journal of Applied Economics, Finance and Accounting*.
- Weerasekara I; 2021. Working Capital Management and Its Association With Firm Performance and Value: Evidence From NZX Firms. .
- Weinraub HJ, Visscher S; 1998. Industry practice relating to aggressive conservative working capital policies. *Journal of Financial and Strategic Decision*, 11(2):11-18.
- Yang G, Ronald RJ, Chu P; 2005. Inventory models with variable lead time and present value. *European Journal of Operational Research*, 164(2):358-366.