Examining the Moderating Effect of Earnings Management on the Association between Working Capital Management and Firm's Financial Performance: Evidence from Egypt

Hala Abd-Elnaby Abd-Elfatah, Accounting Department, Faculty of Commerce, Cairo University, Cairo, Egypt. Hala_abdelnabi@foc.cu.edu.eg. Hadeer Adel Abd-Elhamid, Accounting Department, Faculty of Commerce, Cairo University, Cairo, Egypt, hadeer_adel@foc.cu.edu.eg. Kholoud Abd-El Karim Mahmoud (Corresponding author), Accounting Department, Faculty of Commerce Cairo University, Cairo, Egypt. Kholoud_abdelkarim@foc.cu.edu.eg

Abstract

The objective of this research is to study the influence of Working Capital Management (WCM) and its components on a firm's Financial Performance (FP). In addition, it aims to examine the moderating consequence of Earnings management (EM) on the association between WCM and the firm's FP. For the five-year study period from 2014 to 2018, a sample of 61 companies registered on the Egyptian stock exchange EGX was employed. The study hypotheses are tested using the Panel Least Squares (PLS) and Estimated Generalized Least Square (EGLS) regression analyses. The findings showed that WCM as measured by Cash Conversion Cycle (CCC) had a considerable negative influence on the firm's FP as measured by Return on Assets (ROA), Return on Equity (ROE), and Earnings per Share (EPS). It is concluded that the efficient management of WC can be achieved through shortening Average Days of collecting Receivables (ADR) and Average Days of holding Inventory (ADI) and lengthening Average Days of payment of Payables (ADP) as possible which in turn will be reflected positively on overall firm's FP. Finally, the results indicated that the involvement of EM practices measured by the modified Jones model (1995) strengthens the association between WCM and ROA. Thus, managers use EM practices in the process of WCM to improve a firm's FP measured by ROA.

Keywords*:* Working Capital Management, Earnings management, Financial Performance.

1. Introduction

In the last few years, WCM has been considered as the lifeblood of any firm because it is among the most crucial elements of corporate financial management (Afrifa & Padachi, 2016; Padachi, 2006; Deloof, 2003). Many firms have directed their attention to rationalizing and managing short-term investments due to accelerated growth in competition, high-interest rates, high inflation, and increased prices. As a result, WCM has a crucial function in enhancing a firm's profitability, performance, and shareholders' wealth (Raheman & Nasr 2007; Yazdanfar & Öhman 2014; Sathyamoorthi et al., 2018).

Working Capital (WC) is considered a crucial issue for the existence of any business organization to keep its solvency, liquidity, and profitability (Yahaya, 2016). WC represents the sum of money required to maintain an enterprise's daily operations (Vallalnathan & Joriye, 2013). It is a part of the firm's total assets that might take on several forms throughout routine business activities. (Oyedele, et al., 2017). Moreover, it can serve as a reserve of liquidity to meet uncertainties or contingencies to make a balance between cash inflow and cash outflow (Sanusi, 2006). The variance between total current assets and total current liabilities is known as WC (Afza & Nazir, 2008 & Arnold, 2008). It can be defined as the total amount of current assets that remain after all current liabilities have been paid. The importance of this idea lies in the fact that it offers a numerical indicator of confidence in the capacity of a company's current assets to satisfy its short-term liabilities (Mbawuni et al., 2016; Brealey et al., 2015; Ross et al., 2010).

WCM is the management of a company's current assets and liabilities in such a way as to ensure that a sufficient degree of WC is preserved (Gill et al., 2010). Al-Taleb et.al (2012) introduced WCM as the scheduling and monitoring process of current assets and current liabilities to alleviate the firm's incapability to meet its financial obligations in the short term. Hence, WCM can be defined as a set of administrative decisions related to forecasting and governing each component of current assets and current liabilities and the inter-relationship that exists between them through the development of specific policies and strategies that help the firm's management to maintain a reasonable level of WC which make a balance

between liquidity and profitability, increase shareholders' wealth and enhance firm's FP as a whole within the framework of firm's general policy.

Previous studies exposed an apparent debate about the association between a firm's FP and CCC employed as a measure of WCM. Numerous studies have found an inverse association between CCC and FP, implying that the shorter the period of CCC, the higher the FP (Ren et al., 2019; Quadri, 2018; Dadzie & Waife, 2017; Yakubu et al., 2017; Tran et al., 2017; Yazdanfar & Öhman, 2014; Ukaegbu, 2014; Nobanee et al., 2011; Lazaridis & Tryfonidis, 2006; Deloof, 2003). Shortening the CCC period allows companies to use cash flow and invest it in more profitable assets than in current assets with less profit. In contrast, other studies found that CCC is positively related to FP, implying that the lengthier the period of CCC, the greater the firm's FP (Amponsah-Kwatiah & Asiamah, 2020; Nijam, 2016; Akoto et al., 2013; Abuzayed, 2012; Sharma & Kumar, 2011; Nobanee, 2009; Gill et al., 2010). Lengthening the period of CCC will build good relations with the firm's customers, investors, creditors, and suppliers, encouraging them to engage in more activities with the firm. In addition, some studies found that CCC has an insignificant effect on FP such as Abdulazeez et al. (2018); Kasozi (2017); Adamu (2016); Mbawuni et al. (2016); Bagh et al. (2016); Niresh (2012); Samiloglu & Demirgunes (2008).

Furthermore, there is also a debate in the prior literature about the impact of each component of WCM which are ADR, ADI and ADP on firm's FP. Lengthening trade credit given to customers by extending ADR and shortening ADP to creditors or suppliers will build good relations with the firm's customers, creditors and suppliers, encouraging them to increase their transactions with the firm (Adamu, 2016). In addition, increasing ADI could decrease shortage costs of inventory and make good use of sales opportunities (Kasozi, 2017 and Adamu, 2016). As a result, it will be reflected positively on the whole performance of the firm. The other point of view argues that decreasing ADR from customers, shortening ADI and delaying the payment of payables to creditors and suppliers will allow more cash that can be used or invested to generate more profits (Yakubu et al., 2017). As a result, it will be reflected positively on the FP, but it may harm the relations between the firm and its customers, creditors and suppliers. According to these different views, the results of the previous studies conflict

with each other regarding the effect of each component of WCM on FP. Hence, such a debate in the previous literature requires more investigation on the influence of WCM and its elements on firm's FP to determine the efficient way for WCM which can achieve higher FP.

A contradiction of interest would also occur between the company's management and shareholders during the WCM process because managers might only be interested in maximising their personal welfare at the expense of owners. Because of this, managers may decide to use their managerial discretion in managing WC by engaging in EM if shareholders and firm managers' incentives are not aligned. It is practice of taking purposeful actions within the confines of Generally Accepted Accounting Standards (GAAP) to achieve the required level of reported earnings (Boachie & Mensah, 2022). Schipper (1989) defined EM as an intentional interference in the external financial reporting process for personal advantage. The fundamental aim of EM is to smooth out income and reflect a stable performance image for a company (Schipper, 1989). Therefore, employing EM practices would affect the way of how managers make decisions in WCM (Ashhari, 2012).

Hence, EM would be involved in the process of WCM as components of WC accruals are subject to earnings manipulation. Firm's managers used Discretionary Accruals (DA) in management of WC due to the flexibility of GAAP (Dechow & Dechiv, 2002; Karacaer et al., 2009). In addition, manipulation of accruals will be the first tool selected by managers to reach their interests because it is considered the easiest and cheapest instrument for managers to use (Peasnell et al., 2005). Consequently, the involvement of EM practices in the process of WCM would positively or negatively affect FP depending on the intention of management behind these practices and how firm's stakeholders interpret these earnings. Accordingly, due to the lack of previous studies concerning such area, the current research aims to examine the moderating influence of EM on the association between WCM and FP.

The present study adds to the earlier literature in a variety of ways; first, this research employed three indicators of firm's FP which are ROA, EPS, and ROE to reflect FP from different perspectives. Second, the current research examines the influence of WCM and its separate components on

firm's FP to help financial managers determine the effective and efficient way for WCM and provide better insights on how to create efficient WCM strategies which can achieve higher FP for the Egyptian firms. Finally, the main contribution of the current research is that it is considered the first research which examines the association among WCM, EM and FP on the Egyptian stock market by examining whether the involvement of EM practices impact the association between WCM and Egyptian firms' FP.

The structure of this study is as follows; Part 2 contains a review of the literature and the formulation of hypotheses. In Part 3, the research design is presented. The study findings and empirical tests are exhibited in Part 4. Discussion of the findings is showed in Part 5. The conclusions of the research are presented in the final section.

2. Literature Review and Hypotheses Development

The global financial crisis and the economic recession in 2008 forced companies to focus on investing in short-term assets and depend more on resources that mature in less than a year. As the largest percentage of companies' failure backs to weak decisions related to short-term financial management. Therefore, all companies are required to pay a great attention to WCM. Since, it plays a key role in the administration of current assets, current liabilities and the inter-relationship between them to ensure the continuity of the company's operations. Additionally, WCM can provide suitable cash flows to cover both short-term obligations and expected operating expenses in addition to maintaining the appropriate level of WC to maximize shareholders' wealth. Consequently, it can achieve the greatest possible profits and enhance the overall firm's Financial Performance (FP).

Therefore, WCM can have a direct effect on firm's profitability and performance as a whole. Prior literature depends more on using CCC as a measure of WCM. The concept of CCC is introduced by (Abuzayed, 2012) as a crucial element in management of WC. It is one of the comprehensive measures of efficiency of WCM that reflects all financial flows related to inventory, payables, and receivables. Thus, instead of using traditional liquidity methods like the current ratio and quick ratio, it is more appropriate and accurate to examine and assess the effectiveness and efficiency of WCM using CCC (Abuzayed, 2012). The CCC is the time interval that passes

between a company paying cash for raw materials and receiving receivables from the sale of finished items (Nobanee, 2009). CCC is simply calculated by adding ADR to ADI and then subtracting ADP from it. It displays how rapidly short-term assets are transformed into cash and provides a general review of critical financial processes in the businesses.

Several earlier research realized a negative association between firm's FP and CCC employed as a comprehensive indicator for WCM. Ren et al. (2019) discussed the association between WCM and FP measured by the profit margin of operating assets and ROA on listed manufacturing companies in China over a period from 2010 to 2017. The results of the study revealed that CCC has a significant negative impact on FP. These findings suggested that firm's managers must create a rational policy for collecting receivables to avoid bad debts which could reduce firm's profitability. In addition, firms should shorten ADI to reduce warehouse costs; and accelerate ADP to create good relations with the firm's suppliers and use the benefit of sales discount. These findings were consistent with Oyedele et al. (2017) and Yazdanfar & Öhman (2014) who concluded that shortening the length of CCC would be reflected positively on enhancing profitability and FP in addition to increasing profits to shareholders.

Consistently, Quadri (2018) studied the outcome of WCM on ROA used as a proxy for firm's FP. The study's findings showed that ADR and ADP were related positively with ROA, suggesting that firms should provide appropriate credit terms to customers to encourage them to increase their purchases which in turn would maximize revenues. In addition, firms should negotiate credit terms with their suppliers to enjoy a longer period to settle their bills. Hence it would help firms make use of available funds to generate more profits. Moreover, it was found that there was a negative association between ADI and CCC with ROA, suggesting that reducing ADI and CCC would improve the profitability of consumer goods firms in Nigeria.

However, Dadzie & Waife (2017) suggested that shortening ADR and ADI to a reasonable minimum and delaying the payment of their bills to suppliers would increase the firm's profitability and create value for shareholders of Ghanaian firms. These results were consistent with Sharif & Islam (2018) and Pais & Gama (2015) who concluded that firm's profitability could be increased by practicing aggressive approach. Further,

Yakubu et al. (2017) found that ADR, ADI and CCC were related negatively and significantly with ROA, while ADP was related positively and significantly with ROA. These results indicated that speeding up the collection of receivables from customers, reducing the average period of holding inventory, shortening the length of CCC, and delaying the settlement of debt obligations would enhance the profitability and FP of Ghanaian firms. Consistently, Nobanee et al. (2011) recommended that achieving the optimal level of receivables, payables, inventory and keeping CCC at an optimum length would be reflected positively on sales, profitability, FP and market value of firms. Moreover, Tran et al. (2017) studied the influence of WCM components (CCC, ADR, ADI and ADP) on firm's FP measured by Gross Operating Profit (GOP) on a sample consisted of 200 Vietnamese SMEs from 2010 to 2012. The study findings indicated that WCM elements had a significant negative influence on GOP. The conclusion of this study highlighted that managers could maximize FP of SMEs by maintaining an optimal level of amount invested in WC components.

In addition, Mansoori & Muhammad (2012) revealed a negative association between CCC and ROA in the construction, electronic and material sectors. So, it could be concluded that the economic sector affected the association among CCC, its components and ROA. Also, managers could increase FP by efficient management of WC through shortening ADI and ADR. Similarly, Lazaridis & Tryfonidis (2006) concluded a significant negative association between CCC and corporate profitability measured by GOP. It was found that ADP and ADR were negatively related to GOP, implying that profitability increased with the decrease in ADR and ADP to reduce cash gap in the CCC. In addition, ADI was related negatively to GOP, which suggested that reducing ADI to a reasonable minimum could maximize profits and avoid interruptions during production due to stock out at any time. These findings were consistent with Deloof (2003) who also concluded that more profitable firms tend to reduce ADR from customers, decrease ADI to a reasonable minimum and pay their bills on time to make use of discounts and build good relations with their firm's suppliers.

In contrast, some previous studies found a positive association between CCC and firm's FP. For instance, Amponsah-Kwatiah & Asiamah (2020) investigated the influence of WCM on manufacturing firm's profitability in

Ghana from 2015 to 2019. The results showed that ADI, ADR, ADP and CCC have a significant positive influence on firm's profitability computed by ROA and ROE. In the same vein, Nijam (2016) reported that CCC and ADR had a significant positive impact on profitability measured by ROA, ROE, Gross Profit Margin (GPM), and Net Profit Margin (NPM), while ADI was related negatively and significantly to profitability. In addition, ADP was found to have a non-significant association with different profitability indicators. Finally, the study concluded that granting more credit period to customers and shortening the average period of holding inventory would maximize profitability for hotels and travel firms.

Moreover, Abuzayed (2012) tested the influence of WCM on firm profitability on a sample of 52 firms registered on the Amman stock exchange, which is considered a small developing market. The empirical results showed that CCC was related positively to firm profitability. Moreover, this study justified the positive relation as in emerging markets where no penalties system applied to managers for their inefficient WCM. Consistently, the study of Sharma & Kumar (2011) is also conducted on an emerging capital market in India on a sample of 263 non-financial companies registered at Bombay stock exchange during 2000 to 2008. This study showed that CCC and ADR are positively related to profitability. Conversely, ADP and average inventory are negatively related to firm profitability. These two studies have one thing in common: they both focused on businesses in developing markets and micro economies, where access to finance was constrained, and financial forecasting was ineffective.

Furthermore, (Gill et al. (2010) analyzed this relation on a sample of 88 companies registered on New York stock exchange in America from 2005 to 2007. The empirical results indicated that CCC is positively associated to firm profitability measured by gross operating profit, but ADR is negatively related to gross operating profit. It was concluded that firm managers could enhance firm profitability by efficiently managing their WC and maintaining ADR at a reasonable level, generating the maximum profitability level. Moreover, Nobanee (2009) aimed to explain this association on a large sample of American firms consisting of 5802 firms registered on the New York Stock Exchange from 1990 to 2004. The outcomes revealed that CCC, ADR, and ADI were positively related to firm's performance measured by

operating income to sales. However, ADP was negatively related to FP. Although the results of the study contradicted the previous studies, it highlighted different perspectives in managing WCM efficiently.

Therefore, it can be concluded that lengthening the period of CCC will decrease shortage costs of inventory and make good use of sales opportunities. Also, it would encourage customers to make more purchases on credit that would be reflected in growth in the company's sales and permit the company to receive discounts and build good relations with their suppliers. Thus, it would be reflected positively on the whole performance of the firm.

However, other studies such as Abdulazeez et al. (2018), who investigated the relationship between WCM and Return on Investment (ROI) as an indication of FP of listed Conglomerate enterprises in Nigeria over the years 2005 to 2014, discovered that CCC had a negative effect on a firm's financial performance. The findings showed that debtor's collection period of receivables and the creditor's period to settle their debts had a significant negative impact on ROI, while CCC had an insignificant positive impact on ROI. The recommendations of this study showed that enhancing FP of Conglomerate firms was associated with reducing the period of collecting receivables and shortening the period of settling their debts as possible. Also, Kasozi (2017) focused on examining WCM trends and its influence on FP of 69 manufacturing businesses registered in the Johannesburg securities exchange (JES) from 2007 to 2016. The findings of this study outlined that ADR and ADP were related significantly and negatively to ROA used as an indicator of firm's FP. In addition, ADI had a significant positive impact on ROA, while the association between CCC and ROA was insignificant so it could not be concluded that shortening CCC or extending CCC would enhance FP or not.

Further, Adamu (2016) used a sample of pharmaceutical firms in Nigeria over a period from 2006 to 2013 to determine the effect of components of WC on ROA. The study concluded that ADR and ADI were related significantly and positively to ROA, while ADP was related significantly and negatively to ROA. Moreover, it was found that CCC had an insignificant influence on ROA, suggesting that enhancing firm's FP could be achieved through extending the period given to customers to pay for their credit

purchases, increasing investments in inventory, accelerating payment of payables to suppliers and following aggressive policy of WCM. Similarly, Bagh et al. (2016) reported that CCC had a significant negative impact on ROA, but it had insignificant negative impact on ROE and EPS. Consistently, Niresh (2012) found that WCM measured by CCC and current assets to total assets ratio have insignificant impact on ROA and ROE, suggesting that collecting receivables from customers according to the approved credit terms, delaying payment of payables to suppliers and improving control system for inventory would have a positive impact on enhancing firm's FP.

According to (Pas & Gama 2015), internal and external factors can affect decisions of firm managers about the ideal levels of current assets and current liabilities and hence should be considered. The WCM policy is typically directed by either an aggressive or conservative approach. Higher profitability can be attained by employing an aggressive strategy that involves investing heavily in non-current obligations while little in current assets. Maintaining low inventory levels lowers inventory holding costs such as storage, spoilage, insurance, and theft, and it also raises ADP by postponing creditor payments (Afrifa & Padachi, 2016 and Falope & Ajilore, 2009). Moreover, allowing minimal trade credit to its customers and maintaining low cash balances. However, it leads to a high level of risk with the possibility of inadequate funds for daily operations and the inability to meet short-term debts that can lead to insolvency and financial crisis (Hassani & Tavosi, 2014).

On the other hand, practicing a conservative strategy with more investment in current assets and less investment in non-current assets, maintains a low level of risk of firm insolvency. It involves maintaining high levels of inventories which can prevent interruptions during the production process, reduce the risk of stock shortages and supply costs (Martínez Solano & García Teruel, 2007 and Deloof, 2003). Furthermore, an increase in trade receivables leads to increased sales as it gives customers time to pay, which may strengthen long-term relationships with its suppliers or customers (Deloof, 2003). However, maintaining high levels of WC would result in a reduction in the firm's profitability which can lead to bankruptcy. Therefore, corporate managers should always seek to balance the benefits and costs of

having high and low WC levels at which firm profitability is maximized (Adam et al., 2017 and Abdussalam & Darun, 2017). Hence, the conservative policy is adopted at lower levels of WC. On the other hand, the aggressive policy is adopted at higher levels of WC. This supports the presence of a concave relationship between WCM and firm's FP.

Consequently, some previous studies concluded a non-linear association between WCM measured by CCC and firm's FP. For instance, Deari et al. (2022) examined the dynamic association between WCM and firm profitability measured by ROA using a sample of eight European Union countries covering 10 years from 2006 to 2015. The findings of the study indicated that there is a significant positive association between WCM and ROA. Also, the findings showed a concave relationship between WCM and firm's profitability, suggesting that firms should seek to achieve the optimal length of CCC to enhance firm's profitability. Similarly, (Banos-Caballero et al. (2012) examined a non-linear relationship between WCM and firm profitability in which return and risk trade-off between various WC strategies are tested on a sample of SMEs firms in Spain. The results indicated a concave relationship between firm profitability measured by ROA and WC level which implies that SMEs have an optimal WC level at which their profitability can be maximized. Based on these results, it is expected that there will be a positive relation between profitability and WC at low WC levels. However, at high WC levels, there will be a negative association between profitability and WC. Also, results of Ajaya (2018) and Gomes (2013) are consistent with the findings of these two studies.

Therefore, the findings of the previous studies were inconsistent with each other. These disagreements may be due to using different samples related to different countries and industries with different WC requirements and using different measures and statistical techniques. Also, one of the main reasons of these disagreements back to the WCM policy followed by each company whether conservative or aggressive approach. Moreover, these conflicting results would back to the different effect of each component of CCC (ADR, ADI, and ADP) on firm's FP. Hence, based on the majority of the previous literature, the first, second and third hypotheses and their sub-hypotheses are developed as follows:

H_1: There is a significant negative association between CCC and ROA.

H_{1a}: There is a significant negative association between Average Days of collecting Receivables and ROA.

H_{1b}: There is a significant negative association between Average Days of holding Inventory and ROA.

H_{1C}: There is a significant positive association between Average Days of payment of Payables and ROA.

H_2: There is a significant negative association between CCC and ROE.

H_{2a}: There is a significant negative association between Average Days of collecting Receivables and ROE.

H_{2b}: There is a significant negative association between Average Days of holding Inventory and ROE.

H_{2C}: There is a significant positive association between Average Days of payment of Payables and ROE.

H_3: There is a significant negative association between CCC and EPS.

H_{3a}: There is a significant negative association between Average Days of collecting Receivables and EPS.

H_{3b}: There is a significant negative association between Average Days of holding Inventory and EPS.

H_{3C}: There is a significant positive association between Average Days of payment of Payables and EPS.

Moreover, from reviewing the prior literature, it is indicated that there is a scarcity of preceding studies which examined the association among WCM, EM, and firm's FP. For instance, Ashhari (2013) tested the impact of WCM on EM and their influence on firm performance measured by ROA, Tobin'Q, and market-to-book value. This study adopted the Generalized Moment Method (GMM) to analyze the data based on a sample of 373 publicly listed firms in Malaysia and Thailand including 224 Malaysian firms and 149 from Thailand over a period of 14 years from 1994 to 2007. The empirical evidence indicated that there was a negative association between WCM and all proxies of firms' FP after the Asian crisis, but there was no association between WCM and FP before the Asian crisis, implied that managers directed their attention to manage their WC efficiently after the Asian crisis, which in turn would be reflected positively on firms' FP. Moreover, the results concluded that there was a significant association between EM and WCM which meant that EM practices affected WCM as it

would affect the way of how managers made decisions regarding the management of WC. In addition, Li et al. (2014) studied the association between WCM and EM measured by discretionary accruals. The study's results indicated that companies with high rates of WC growth were more likely to engage in EM practices because of burden to retain their operating cash flows.

Based on the few studies concerning the association among WCM, EM and firm's FP. It can be noted that WCM and its components (CCC, ADR, ADI, and ADP) were affected significantly by the indicators of EM such as earnings persistence, accruals quality, and discretionary accruals. Also, it was indicated that EM affected polices employed for WCM and its components (Ashhari, 2013). As firms' managers practiced EM in WC accruals because of the ease of making manipulations in these accounts and flexibility of accounting standards. Therefore, the involvement in EM had an effect on WCM as it would affect the way of how managers made decisions regarding the management of WC. Hence, it would positively or negatively affect FP depending on the intention of the firm's management behind these EM practices and how the firm's stakeholders interpret these earnings. Hence, the fourth, fifth, and sixth hypotheses are developed as follows:

H_4: The involvement of EM strengthens the association between CCC and ROA.

H_5: The involvement of EM strengthens the association between CCC and ROE.

H_6: The involvement of EM strengthens the association between CCC and EPS.

3. Research Design

This part illustrates the sample selection process and the sources of data that were gathered, the variables used in the study, how they were measured, and the empirical models employed.

3.1. Sample Selection and Data Collection

The sample of this research includes all Egyptian firms registered in the EGX 100 except for all financial institutions covering a period of five years from 2014 to 2018. The sample contains of 61firms and 305 observations. Data is collected from the annual reports, including balance sheets, income

statements, and statements of cash flows available on the Thomson Reuters Database and firms' official websites.

3.2. Description and Measurement of the Research Variables

This research uses ROA, ROE, and EPS as proxies for the firm's FP (dependent variable). In addition, CCC is used as a comprehensive measure for WCM (independent variable) in addition to its three main components: ADR, ADI, and ADP. Finally, discretionary accruals is used as an indicator for EM (the moderating variable). Table 1 indicates the description of the research variables and how these variables are measured and calculated.

Table (1): Variables Description and their Measurements

Variable	Description	Type	Measurement
ROA_{it}	ROA of firm i at year t	Dependent variable	= Net income after tax/Total assets (Deari et al., 2022; Ren et al., 2019; Quadri, 2018; Sathyamoorthi et al., 2018; Dadzie & Waife, 2017; Yakubu et al., 2017; Nobanee, 2017)
ROE_{it}	ROE of firm i at year t	Dependent variable	= Net income after tax/ Total equity (Amponsah-Kwatiah & Asiamah, 2020; Sawarni et al., 2020; Nijam, 2016; Bagh et al., 2016; Akoto et al., 2013; Niresh, 2012)
EPS_{it}	EPS of firm i at year t	Dependent variable	= Net income/(Weighted Average of common shares outstanding) (Bagh et al., 2016)
CCC_{it}	CCC of firm i at year t	Independent variable	= ADR + ADI – ADP (Ren et al., 2019; Quadri, 2018; Abdulazeez et al., 2018; Dadzie & Waife, 2017; Tran et al., 2017; Kasozi, 2017)
ADR_{it}	Average days of collecting receivables of firm i at year t	Independent variable	= $(Average\ Accounts\ Recivables)/(\text{Net Credit Sales}) \times 365$ (Ren et al., 2019; Quadri, 2018; Abdulazeez et al., 2018; Dadzie & Waife, 2017; Tran et al., 2017; Kasozi, 2017)

ADI_{it}	Average days of holding inventories of firm i at year t	Independent variable	$= (\text{Average Inventory})/(\text{Cost of Goods Sold}) \times 365$ (Ren et al., 2019; Quadri, 2018; Abdulazeez et al., 2018; Dadzie & Waife, 2017; Tran et al., 2017; Kasozi, 2017)
ADP_{it}	Average days of payment of payables of firm i at year t	Independent variable	$= (\text{Average Accounts Payables})/(\text{Cost of Goods Sold}) \times 365$ (Ren et al., 2019; Quadri, 2018; Abdulazeez et al., 2018; Dadzie & Waife, 2017; Tran et al., 2017; Kasozi, 2017)

(*Continued*)

Variable	Description	Type	Measurement
DA_{it}	Discretionary accruals of firm i at year t	Independent variable	The absolute value of discretionary accruals using the modified Jones model by Dechow *et al.* (1995) is used as an indicator for EM (Dechow et al., 1995; Kothari et al., 2005; Matsunaga and Yeung, 2008). $\boldsymbol{TACC_{it} / A_{it-1} = \beta 1\ (1 / A_{it-1}) + \beta 2\ (\Delta REV_{it} - \Delta AR_{it} / A_{it-1}) + \beta 3\ (PPE_{it} / A_{it-1}) + e_{it}}$ *where* $TACC_{it}$ is total accruals of firm i in year t. It is calculated as the difference between net income after tax and operating cash flows; A_{it-1} the total assets of firm i in year t-1; Δ REV is the change in revenues from the previous year ($REV_t - REV_{t-1}$); ΔAR is the change in net accounts receivables from the previous year ($AR_t - AR_{t-1}$); PPE_{it} the gross value of property, plant, and equipment of firm i in year t; and e_{it} The remainder of the model expresses a random error, representing discretionary accruals (DA). Finally, the absolute value of DA is used as a measure of EM, where the lower absolute value of DA refers to lower EM and vice versa.

$(CCC*DA)_{it}$	Interaction term between CCC and discretionary accruals of firm i at year t	Interaction variable	(Cash conversion cycle) × (The absolute value of discretionary accruals)
$SIZE_{it}$	Firm size of firm i at year t	Control variable	The natural log of the total firm's assets (Chakroun & Amar, 2019; Sharif & Islam, 2018; Ajaya & Swagatika, 2018; Kasozi, 2017; Jamkarani & Hozi, 2016; Martínez-Ferrero, 2014)
SG_{it}	Sales growth of firm i at year t	Control variable	= (Current year sales – Last year sales)/(Last year sales) (Wang et al., 2020; Afrifa, 2016; Baños-Caballero et al., 2012)
DR_{it}	Debt ratio of firm i at year t	Control variable	= (Total debt)/(Total equity) (Deari et al., 2022; Wang et al., 2020; Laghari and Chengang, 2019)
CR_{it}	Current ratio of firm i at year t	Control variable	= (Current Assets)/(Current Liabilities) (Amponsah-Kwatiah & Asiamah, 2020;Ajaya & Swagatika, 2018)

3.3. Research Models:

In order to test the validity of the research hypotheses, multiple regression analysis is applied using the Economic Views (E-views) statistical package (version 9). First, empirical models (1, 2, 3, 4, 5 and 6) are used to examine the first three hypotheses and its sub-hypotheses concerning the association between WCM and FP. Finally, empirical models (7, 8 and 9) are used to examine the fourth, fifth and sixth hypotheses concerning the association among WCM, EM, and FP. These empirical models are constructed as follows:

Model (1): $ROA_{it} = \beta0 + \beta1\ (CCC)_{it} + \beta2\ (SIZE)_{it} + \beta3\ (SG)_{it} + \beta4\ (DR)_{it} + \beta5\ (CR)_{it} + E_{it}$

Model (2): $ROA_{it} = \beta0 + \beta1\ (ADR)_{it} + \beta2\ (ADI)_{it} + \beta3\ (ADP)_{it} + \beta4\ (SIZE)_{it} + \beta5\ (SG)_{it} + \beta6\ (DR)_{it} + \beta7\ (CR)_{it} + E_{it}$

Model (3): $ROE_{it} = \beta0 + \beta1\ (CCC)_{it} + \beta2\ (SIZE)_{it} + \beta3\ (SG)_{it} + \beta4\ (DR)_{it} + \beta5\ (CR)_{it} + E_{it}$

Model (4): $ROE_{it} = \beta0 + \beta1\ (ADR)_{it} + \beta2\ (ADI)_{it} + \beta3\ (ADP)_{it} + \beta4\ (SIZE)_{it} + \beta5(SG)_{it} + \beta6(DR)_{it} + \beta7(CR)_{it} + E_{it}$

Model (5): $EPS_{it} = \beta0 + \beta1\ (CCC)_{it} + \beta2\ (SIZE)_{it} + \beta3\ (SG)_{it} + \beta4\ (DR)_{it} + \beta5\ (CR)_{it} + E_{it}$

Model (6): $EPS_{it} = \beta0 + \beta1\ (ADR)_{it} + \beta2\ (ADI)_{it} + \beta3\ (ADP)_{it} + \beta4\ (SIZE)_{it} + \beta5(SG)_{it} + \beta6(DR)_{it} + \beta7(CR)_{it} + E_{it}$

Model (7): $ROA_{it} = \beta0 + \beta1\ (CCC)_{it} + \beta2\ (DA)_{it} + \beta3\ (CCC * DA)_{it} + \beta4\ (SIZE)_{it} + \beta5\ (SG)_{it} + \beta6\ (DR)_{it} + \beta7\ (CR)_{it} + E_{it}$

Model (8): $ROE_{it} = \beta0 + \beta1\ (CCC)_{it} + \beta2\ (DA)_{it} + \beta3\ (CCC * DA)_{it} + \beta4\ (SIZE)_{it} + \beta5\ (SG)_{it} + \beta6\ (DR)_{it} + \beta7\ (CR)_{it} + E_{it}$

Model (9): $EPS_{it} = \beta0 + \beta1\ (CCC)_{it} + \beta2\ (DA)_{it} + \beta3\ (CCC * DA)_{it} + \beta4\ (SIZE)_{it} + \beta5\ (SG)_{it} + \beta6\ (DR)_{it} + \beta7\ (CR)_{it} + E_{it}$

4. The Empirical Study

4.1. Descriptive Statistics

This part displays the descriptive analysis of the dependent, independent, and control variables. The features of the sample are described, and the validity of the normal distribution is examined, using descriptive statistics. Table 2 presents the findings.

Table (2): Descriptive Statistics of Variables

	ROA	ROE	EPS	CCC	ADR	ADI	ADP	DA	CR	DR	SIZE	SG
Mean	0.042	0.128	0.265	105.084	44.683	103.680	36.559	0.258	1.414	0.266	14.426	0.120
Median	0.038	0.103	0.230	92.582	32.243	93.500	35.023	0.140	1.320	0.130	14.361	0.120
Maximum	0.154	0.497	1.016	285.577	138.304	262.600	80.392	1.173	2.840	1.160	18.383	0.595
Minimum	-0.070	-0.235	-0.510	-77.746	0.005	2.200	1.174	5.05E-05	0.230	-0.581	10.115	-0.370
Std. Dev.	0.044	0.153	0.305	75.920	39.449	58.129	18.264	0.272	0.627	0.315	1.727	0.196
Skewness	0.154	0.279	0.276	0.528	0.692	0.526	0.256	1.372	0.357	0.884	-0.098	0.071
Kurtosis	2.781	2.797	2.859	2.670	2.216	2.583	2.444	4.034	2.320	2.961	2.682	2.707
Jarque-Bera	1.811	4.482	4.127	15.566	32.112	16.255	7.254	108.489	12.355	39.097	1.767	1.343
Probability	0.404	0.106	0.127	0.000	0.000	0.000	0.027	0.000	0.002	0.000	0.413	0.511
Observations	305	305	305	305	305	305	305	303	305	300	304	305

The descriptive statistics for each variable utilised in the current study are shown in Table 2. The mean (median) values of ROA, ROE, and EPS are 0.042 (0.038), 0.128 (0.103), and 0.265 (0.230), respectively, according to the descriptive statistics for dependent variables, with standard deviations of 0.044, 0.153, and 0.305. The values of ROA, ROE, and EPS are normally distributed since the values of skewness and (kurtosis) should be between -1 and +1 and -3 and +3, respectively. The values of skewness and (kurtosis) are 0.154 (2.781), 0.279 (2.797), and 0.276 (2.859), respectively. Additionally, the Jarque-Bera test, which has a significance level above 0.05, reveals the normal distribution of all the variables used in this study. In light of this, ROA, ROE, and EPS have normal distributions at (1.811, p-value = 0.404), (4.482, p-value = 0.106), and (4.127, p-value = 0.127), respectively.

Concerning independent variables, the mean (median) values of CCC, ADR, ADI and ADP are 105.084 (92.582), 44.683 (32.243), 103.679 (93.500) and 36.559 (35.023) with a standard deviation of 75.920, 39.449, 58.129 and 18.263 respectively. This disparity among firms used in this sample is due to the different nature of each industry, the difference in policies and strategies followed by each firm as well as the difference in conditions and procedures followed by each firm to collect its receivables from its customers or to pay its payables to its suppliers. The value of skewness and (kurtosis) are 0.528 (2.670), 0.692 (2.216), 0.526 (2.583) and 0.255 (2.444) respectively which indicates that the values of CCC, ADR, ADI and ADP are normally distributed. However, according to jarque-bera test, the p values of CCC, ADR, ADI and ADP are 0.000, 0.000, 0.000 and 0.027 respectively, indicating that these variables are not normally distributed.

Furthermore, according to the DA's descriptive statistics, the sample as a whole engaged in EM practices at various degrees, with a mean of 0.258, a median of 0.140, and a standard deviation of 0.272. According to the values of DA's skewness and kurtosis, which are 1.372 and 4.034, respectively, DA values are regularly distributed. The Jarque-Bera test's p-value, however, is 0.000, indicating that DA values are not normally distributed. Furthermore, the mean and the median of the interaction term between CCC and DA are 17.532 and 14.104 respectively. The values of skewness and kurtosis of the interaction term are 0.826 and 2.739 respectively which reveals that the values of interaction term between CCC and DA is normally distributed. While, jarque-

bera test (p-value) for the interaction term is 0.000 which means that it is not normally distributed.

According to the descriptive statistics for control variables, SIZE, CR, DR, and SG have mean (median) values of 14.426 (14.362), 1.414 (1.320), 0.266 (0.130), and 0.120 (0.120), respectively, with standard deviations of 1.727, 0.627, 0.315, and 0.196. All of the control variables appear to have a normal distribution because the skewness (kurtosis) values for SIZE, CR, DR, and SG are 0.098 (2.682), 0.357 (2.320), 0.884 (2.961), and 0.071 (2.707), respectively. The Jarque-Bera test indicates that SIZE and SG are normally distributed, with p-values of 0.413 and 0.511, respectively, whereas CR and DR are not, with p-values of 0.002 and 0.000, respectively, both less than 0.05.

4.2. Regression Analysis

Multiple regression analysis is used to test the research's hypotheses. PLS and EGLS regression are applied to each empirical model to assess the impact of each independent variable on the dependent variable. In this study, SIZE, SG, DR, and CR were used as control variables in all empirical models. The results of all the empirical models utilized are presented in this section.

Table 3 presents PLS regression analysis to determine the Effect of CCC on ROA testing H_1 using Model (3).

Table (3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CCC	-0.000200	6.65E-05	-3.011374	0.0029
SIZE	0.015804	0.007395	2.137255	0.0336
SG	0.025304	0.010622	2.382248	0.0180
DR	-0.033230	0.012235	-2.716017	0.0071
CR	0.000388	0.004909	0.079062	0.9371
C	-0.161313	0.105196	-1.533453	0.1265
Effects Specification				
R-squared	0.680178	Mean dependent var		0.040748
Adjusted R-squared	0.585622	S.D. dependent var		0.043678
S.E. of regression	0.028117	Akaike info criterion		-4.105730
Sum squared resid	0.181827	Schwarz criterion		-3.251781
Log likelihood	682.8066	Hannan-Quinn criter.		-3.763940
F-statistic	7.193377	Durbin-Watson stat		1.690789
Prob(F-statistic)	0.000000			

ROA = -0.000200150319992*CCC + 0.0158040364842*SIZE + 0.0253044401158*SG - 0.0332296634957*DR + 0.000388138350392*CR - 0.161313060986

Table 3 shows that the coefficient of the main independent variable (CCC) is negative (-0.000) and is statistically significant at 0%, lower than 0.05. This implies that there is a significant negative impact of CCC on ROA. Thus, the first main hypothesis (H_1) is accepted. Regarding control variables, the regression analysis results revealed that both SIZE and SG are significantly and positively related to ROA. It is also found that DR is related negatively and significantly to ROA. But there is an insignificant association between CR and ROA.

Additionally, the F-test results show that the model is significant because its value is (7.19, P-value=0.000). The model's R^2 value is 0.68, which indicates that CCC, SIZE, SG, DR, and CR account for roughly 68 percent of variations in ROA. Additionally, it is demonstrated that the model has no serial correlation issue in the residuals because the Durbin-Watson score is (1.7).

Table 4 presents PLS regression analysis to determine the Effect of ADR, ADI and ADP on ROA testing H_{1a}, H_{1b} and H_{1c} using model (2).

Table (4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ADR	-0.000286	0.000123	-2.331486	0.0206
ADI	-0.000170	8.61E-05	-1.970949	0.0499
ADP	-0.000168	0.000163	-1.032341	0.3030
SIZE	0.017664	0.007455	2.369390	0.0187
SG	0.019891	0.011065	1.797714	0.0735
DR	-0.030734	0.012282	-2.502318	0.0130
CR	-0.001302	0.004896	-0.265894	0.7906
C	-0.170228	0.105688	-1.610668	0.1086
Effects Specification				
R-squared	0.684085	Mean dependent var		0.040748
Adjusted R-squared	0.587093	S.D. dependent var		0.043678
S.E. of regression	0.028067	Akaike info criterion		-4.104644

Sum squared resid	0.179605	Schwarz criterion	-3.225943
Log likelihood	684.6442	Hannan-Quinn criter.	-3.752947
F-statistic	7.053041	Durbin-Watson stat	1.698534
Prob(F-statistic)	0.000000		

ROA= - 0.000286*ADR - 0.000170*ADI - 0.000168*ADP + 0.017664*LNSIZE + 0.019891*SG - 0.030734*DR - 0.001302*CR - 0.170228*C

As shown in *Table 4*, the coefficients of the independent variables (ADR, ADI and ADP) are (-0.0003), (-0.0002) and (0.0002) with P values of (0.02), (0.04) and (0.3) respectively. This reveals that ADR and ADI are negatively and significantly related to ROA because their P values are lower than 0.05. However, there is an insignificant association between ADP and ROA. Thus, H_{1a} and H_{1b} are accepted, while H_{1c} is rejected. In addition, firm size is related significantly and positively to ROA. However, DR has a significant and negative association with ROA. Also, regression results show that SG and CR have an insignificant association with ROA.

Furthermore, the F-test results (7.05, P-value=0.000) show that the model is significant. The model's R^2 value is 0.68, which indicates that ADR, ADI, ADP, SIZE, SG, DR, and CR account for roughly 68 percent of variations in ROA. Additionally, it is demonstrated that the model has no serial correlation issue in the residuals because the Durbin-Watson score is (1.7).

Table 5 shows PLS regression analysis to determine the Effect of CCC on ROE testing H_2 using model (3).

Table (5)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE(-1)	0.315973	0.080926	3.904458	0.0001
CCC	-0.000707	0.000284	-2.491143	0.0137
SIZE	0.054177	0.030037	1.803679	0.0730
SG	0.083486	0.038338	2.177612	0.0308
DR	0.004028	0.044262	0.091004	0.9276
CR	-0.010604	0.018500	-0.573205	0.5673
C	-0.622793	0.427495	-1.456842	0.1470

Effects Specification

R-squared	0.749639	Mean dependent var	0.126248
Adjusted R-squared	0.650080	S.D. dependent var	0.148531
S.E. of regression	0.087862	Akaike info criterion	-1.790078

Sum squared resid	1.320069	Schwarz criterion	-0.789394
Log likelihood	283.8093	Hannan-Quinn criter.	-1.386875
F-statistic	7.529617	Durbin-Watson stat	1.902214
Prob(F-statistic)	0.000000		

ROE = 0.315973197116*ROE(-1) - 0.000707071793851*CCC + 0.0541773911157*LNSIZE + 0.0834859043527*SG + 0.00402801472327*DR - 0.0106041030724*CR - 0.622793201217

Table 5 shows that CCC and ROE have a significant negative relationship because their P-values are both less than 0.05. The second major hypothesis (H2) is therefore accepted. Additionally, it is demonstrated that the current year ROE is significantly positively impacted by the one-year lagged value (-1) of ROE. As a result, the addition of ROE (-1) contributes to explaining the variations in ROE for the current year. Concerning to the control variables; it is found that SG is related significantly and positively to ROE. In contrast, there is an insignificant association between firm size, DR and CR with ROE.

The model is also significant according to the F-test, which has a value of (7.529, P-value=0.000). The model's R^2 value is 0.7, which indicates that DA, SIZE, SG, DR, and CR account for around 70% of differences in ROE. Additionally, it is demonstrated that the model has no serial correlation issue in the residuals because the Durbin-Watson score is (1.9).

Table 6 illustrates panel EGLS regression analysis to determine the Effect of ADR, ADI and ADP on ROE testing H_{2a}, H_{2b} and H_{2c} using model (4).

Table (6)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE(-1)	0.401111	0.114140	3.514195	0.0006
ADR	-0.000180	0.000225	-0.798417	0.4257
ADI	-0.000285	0.000101	-2.818052	0.0054
ADP	0.000281	9.93E-05	2.825989	0.0053
SIZE	0.000552	0.013315	0.041495	0.9669
SG	0.069343	0.017776	3.900889	0.0001
DR	0.010582	0.006954	1.521578	0.1300
CR	-0.001169	0.005852	-0.199753	0.8419
C	0.085145	0.183738	0.463403	0.6437
Effects Specification				
R-squared	0.908418	Mean dependent var		0.222361

Adjusted R-squared	0.872743	S.D. dependent var	0.254493
S.E. of regression	0.086680	Sum squared resid	1.292306
F-statistic	25.46408	Durbin-Watson stat	2.308397
Prob(F-statistic)	0.000000		

ROE = 0.401111244805*ROE(-1) - 0.000180028890588*ADR - 0.000285446278494*ADI + 0.000280524618569*ADP + 0.000552491050401*LNSIZE + 0.0693430044714*SG + 0.0105817913051*DR - 0.00116898642105*CR + 0.0851446720949

From *Table 6*, it is concluded that ADI has a significant negative association with ROE, but ADP has a significant positive association with ROE. It is also found that ADR has an insignificant association with ROE. Therefore, H_{2a} is rejected, but H_{2b} and H_{2c} are accepted. Additionally, it is demonstrated that the current year ROE is significantly and positively impacted by the one-year lagged value (-1) of ROE. As a result, the incorporation of ROE (-1) contributes to explaining the variations in ROE for the current year. Regarding control variables, only SG is associated significantly and positively with ROE, while SIZE, DR, and CR have an insignificant impact on ROE.

Additionally, the F-test results show that the model is significant because its value is (25.46, P-value=0.000). Furthermore, the model's R^2 value of 0.9 indicates that ADR, ADI, ADP, SIZE, SG, DR, and CR account for nearly 90% of variations in ROE. Additionally, it is demonstrated that the model has no serial correlation issue in the residuals because the Durbin-Watson score is (2.3).

Table 7 illustrates panel EGLS regression analysis to determine the consequence of CCC on EPS testing H_3 using model (5).

Table (7)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EPS(-1)	0.322247	0.066010	4.881762	0.0000
CCC	-0.000361	0.000135	-2.681241	0.0080
SIZE	-0.036404	0.020243	-1.798350	0.0739
SG	0.073483	0.034745	2.114912	0.0359
DR	0.066605	0.049552	1.344146	0.1807
CR	0.053538	0.015996	3.347044	0.0010
C	0.645423	0.281169	2.295500	0.0229
Effects Specification				

R-squared	0.962929	Mean dependent var	0.473986
Adjusted R-squared	0.949080	S.D. dependent var	1.157551
S.E. of regression	0.175286	Sum squared resid	5.346192
F-statistic	69.53283	Durbin-Watson stat	2.183274
Prob(F-statistic)	0.000000		

EPS = 0.322247014637*EPS(-1) - 0.000361422922607*CCC - 0.0364037744244*LNSIZE + 0.0734825501692*SG + 0.0666053148716*DR + 0.0535384367869*CR + 0.645422720901

A substantial inverse relationship between CCC and EPS is shown in *Table 7*. As a result, the third hypothesis, H3, is supported. Additionally, it is demonstrated that the current year's EPS is significantly and positively impacted by the one-year lagged value (-1) of EPS. As a result, the addition of EPS (-1) helps to explain changes in the current year's EPS. With respect to control variables; the results indicate that SG and CR are positively and significantly associated with EPS. While, SIZE and DR have an insignificant impact on EPS.

Additionally, the F-test results show that the model is significant because its value is (69.53, P-value=0.000). The model's R^2 value is 0.96, which indicates that CCC, SIZE, SG, DR, and CR account for roughly 96 percent of variations in EPS. Additionally, it is demonstrated that the model has no serial correlation issue in the residuals because the Durbin-Watson score is (2.1).

Table 8 presents PLS regression analysis to examine the consequences of ADR, ADI and ADP on EPS testing H_{3a}, H_{3b} and H_{3c} using model (6).

Table (8)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EPS(-1)	0.267818	0.191155	1.401052	0.1630
ADR	-0.001134	0.000415	-2.730515	0.0070
ADI	-0.001014	0.001458	-0.695956	0.4874
ADP	0.000179	0.000286	0.628451	0.5305
SIZE	-0.097155	0.022306	-4.355518	0.0000
SG	0.190717	0.035280	5.405815	0.0000
DR	0.129676	0.056390	2.299643	0.0227
CR	0.091497	0.025624	3.570813	0.0005
C	1.564501	0.414081	3.778247	0.0002
Effects Specification				

R-squared	0.724748	Mean dependent var	0.266854
Adjusted R-squared	0.617528	S.D. dependent var	0.303555
S.E. of regression	0.187731	Akaike info criterion	-0.274090
Sum squared resid	6.061792	Schwarz criterion	0.712091
Log likelihood	100.8908	Hannan-Quinn criter.	0.123269
F-statistic	6.759448	Durbin-Watson stat	2.212929
Prob(F-statistic)	0.000000		

EPS = 0.267818465831*EPS(-1) - 0.00113350205356*ADR - 0.00101448727936*ADI + 0.000179488084608*ADP - 0.0971545975103*LNSIZE + 0.190716536426*SG + 0.129675834866*DR + 0.0914973660702*CR + 1.56450149601

As shown in *Table 8*, ADR is related significantly and negatively to EPS. However, ADI and ADP have an insignificant association with EPS. Consequently, H_{3a} is accepted, whereas H_{3b} and H_{3c} are rejected. It is also found that there is an insignificant positive impact of one year lagged value (-1) of EPS on current year EPS. Regarding control variables; SG, DR, and CR are significantly and positively related to EPS, but SIZE is significantly and negatively related to EPS.

Moreover, the F-test value is (6.759, P-value=0.000), implying that the model is significant. R^2 value is (0.72) which means that ADR, ADI, ADP, SIZE, SG, DR and CR interpret about 72% of the variations in EPS. The Durbin-Watson score is (2.2), thus, this model has no serial correlation problem in the residuals.

Table 9 presents PLS regression analysis to determine the Effect of CCC*DA on ROA testing H_4 using model (7).

Table (9)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CCC	-0.000244	7.12E-05	-3.425972	0.0007
DA	-0.008832	0.014888	-0.593198	0.5536
CCC*DA	0.000499	0.000227	2.202786	0.0286
SIZE	0.015973	0.007347	2.173904	0.0307
SG	0.026310	0.010594	2.483489	0.0137
DR	-0.036975	0.012354	-2.993037	0.0031
CR	-0.000933	0.004952	-0.188479	0.8507
C	-0.162710	0.104217	-1.561264	0.1199
Effects Specification				
R-squared	0.689485	Mean dependent var		0.040851

Adjusted R-squared	0.593732	S.D. dependent var	0.043715
S.E. of regression	0.027864	Akaike info criterion	-4.118611
Sum squared resid	0.176241	Schwarz criterion	-3.237760
Log likelihood	684.6731	Hannan-Quinn criter.	-3.766015
F-statistic	7.200634	Durbin-Watson stat	1.698223
Prob(F-statistic)	0.000000		

ROA = -0.000244036526282*CCC - 0.00883150609271*DA + 0.000499070323942*CCC_DA + 0.0159725603906*LNSIZE + 0.0263096423333*SG - 0.0369750132708*DR - 0.000933252288498*CR - 0.162709957769

Table 9 presents the regression results showing that CCC has a significant negative association with ROA, while DA has an insignificant negative association with ROA. Also, it is found that the interaction term (CCC*DA) has a significant positive effect on ROA. This indicates that practicing EM strengthens the association between CCC and ROA. In other words, the involvement of EM in the management of WC is associated with achieving higher ROA. Therefore, H_4 is accepted. With regard to control variables; the results outline that SIZE and SG are associated positively and significantly with ROA, whereas DR is associated negatively and significantly with ROA. While, there is an insignificant negative association between CR and ROA.

Additionally, the F-test results show that the model is significant because its value (7.2, P-value=0.000). The independent variables CCC, DA, CCC*DA, and control variables SIZE, SG, DR, and CR interpret around 68 percent of variations in ROA, according to the R^2 value of (0.69). Additionally, it is demonstrated that the model has no serial correlation issue in the residuals because the Durbin-Watson score is (1.7).

Table 10 presents PLS regression analysis to identify the impact of CCC*DA on ROE testing H_5 using model (8).

Table (10)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE(-1)	0.296698	0.081879	3.623598	0.0004
CCC	-0.000779	0.000300	-2.598689	0.0102
DA	-0.053669	0.057551	-0.932533	0.3524
CCC*DA	0.000163	0.000843	0.193134	0.8471
SIZE	0.058935	0.030482	1.933447	0.0549

SG	0.090664	0.038665	2.344849	0.0202
DR	-0.013797	0.045514	-0.303138	0.7622
CR	-0.013490	0.018847	-0.715762	0.4751
C	-0.662509	0.431734	-1.534529	0.1268
Effects Specification				
R-squared	0.753909	Mean dependent var		0.126484
Adjusted R-squared	0.651371	S.D. dependent var		0.148797
S.E. of regression	0.087857	Akaike info criterion		-1.784571
Sum squared resid	1.296766	Schwarz criterion		-0.751814
Log likelihood	284.2562	Hannan-Quinn criter.		-1.368398
F-statistic	7.352481	Durbin-Watson stat		1.900652
Prob(F-statistic)	0.000000			

ROE = 0.296697593499*ROE(-1) - 0.000778964578192*CCC - 0.0536685727424*DA + 0.00016273942952*CCC_DA + 0.0589353058761*LNSIZE + 0.090663961221*SG - 0.0137971340225*DR - 0.0134897564269*CR - 0.662508806726

As shown in *Table 10*, CCC has a significant negative effect on ROE, but DA has an insignificant negative effect on ROE. It is also found that there is an insignificant positive association between the interaction variable (CCC*DA) and ROE. This implies that CCC*DA doesn't moderate the association between CCC and ROE. In this case, DA is not considered a moderating variable but an independent variable. Thus, H_5 is rejected. Additionally, it is demonstrated that the current year ROE is significantly and positively impacted by the one-year lagged value (-1) of ROE. As a result, the incorporation of ROE (-1) contributes to explaining the variations in ROE for the current year. Regarding control variables, SIZE, DR and CR have insignificant negative impacts on ROE. While SG has a significant positive impact on ROE.

Furthermore, the value of F-test is (7.35, P-value= 0.0000) which reveals that the model is significant. R^2 value is (0.75), implying that 75% of the variations in ROE can be explained by CCC, DA, CCC*DA, SIZE, SG, DR and CR. The Durbin-Watson score is 1.9, indicating no serial correlation problem exists in that model.

Table 11 illustrates panel EGLS regression analysis to determine the Effect of CCC*DA on EPS testing H_6 using model (9)

Table (11)

Variable	Coefficient	Std. Error	t-Statistic	Prob.

EPS(-1)	0.309621	0.064833	4.775669	0.0000
CCC	-0.000123	0.000215	-0.572037	0.5680
DA	0.103160	0.052005	1.983673	0.0489
CCC*DA	0.001257	0.000859	1.463940	0.1450
SIZE	-0.049488	0.024752	-1.999357	0.0472
SG	0.111783	0.041348	2.703504	0.0076
DR	0.066154	0.057530	1.149915	0.2518
CR	0.053561	0.019177	2.793005	0.0058
C	0.760261	0.338324	2.247138	0.0259

Effects Specification

R-squared	0.931391	Mean dependent var	0.389613
Adjusted R-squared	0.904509	S.D. dependent var	0.554238
S.E. of regression	0.177616	Sum squared resid	5.394624
F-statistic	34.64753	Durbin-Watson stat	2.268818
Prob(F-statistic)	0.000000		

EPS = 0.309620637075*EPS(-1) - 0.00012315568491*CCC + 0.103160283581*DA + 0.00125749036598*CCC_DA - 0.0494882212732*LNSIZE + 0.111783446362*SG + 0.0661543371832*DR + 0.0535607276224*CR + 0.760260641711

Table 11 shows that CCC has an insignificant negative impact on EPS, whereas DA has a significant positive impact on EPS. The interaction term (CCC*DA) is found to have an insignificant positive impact on EPS, implying that CCC*DA doesn't moderate the association between CCC and EPS. Thus, H_6 is rejected. Furthermore, it is demonstrated that the current year's EPS is significantly positively impacted by the lagged value of the EPS (-1 year). As a result, including EPS (-1) helps to explain how the EPS for the current year changed. Regarding control variables, the results revealed that SIZE has a significant negative association with EPS, while SG and CR have a significant positive association with EPS. In addition, there is an insignificant association between DR and EPS.

Also, the F-test value (34.64, P value=0.000) implies that this model is significant. Independent variables used in this model (CCC, DA, CCC*DA) and control variables (SIZE, SG, DR and CR) can interpret about 93% of the changes in EPS as R^2 value is (0.93). The score of Durbin-Watson is (2.2), meaning there is no serial correlation between residuals in this model.

5. Discussion of the Findings

The primary empirical results of the current research are covered in this part. The results revealed a significant negative impact of CCC used as a comprehensive measure of WCM on a firm's FP measured by ROA, ROE, and EPS. This indicates that the shorter the CCC, the higher the firm's FP. These results support the point that shortening the period of CCC allows companies to use cash flow and invest it in more profitable assets than investing it in current assets with less profit. Thus, the main hypotheses (H1, H2 and H3) are accepted. These results agree with the findings of previous literature such as, Dadzie (2017), Bagh et al. (2016) and Yazdanfar & Öhman (2014) who found that the number of days of CCC is associated negatively with FP measured by ROA. While these results contradicted with Nijam et al. (2016) who found that, there is a significant positive association between CCC and FP measured by ROA and ROE. In addition, these results are inconsistent with Niresh (2012); Bagh et al. (2016) and Kasozi, J. (2017) who found that there is an insignificant association between CCC and FP.

Further analysis indicated that the negative association between CCC and ROA can be justified by the negative impact of ADR and ADI on ROA. Therefore, speeding the collection of receivables from customers and shortening the period of holding inventories are the main reasons behind shortening the number of days of CCC which is related with achieving higher profits. As the decrease in ADR leads to a rapid turnover of sales into cash flows, which enables the company to finance its operating activities or to direct the unutilized cash balance to long-term investments with higher profitability. Additionally, shortening the number of days of keeping inventories minimizes the avoidable costs involved in keeping inventory such as storage costs, insurance costs, and obsolesce costs. Therefore, the shorter the ADR and ADI, the higher the firm's ROA. Hence, the sub hypotheses (H_{1a} and H_{1b}) are accepted, while (H_{1C}) is rejected because ADP has an insignificant impact on ROA. These results are consistent with Yakubu (2017) and Pais & Gama (2015) who found that ADR and ADI are associated significantly and negatively with ROA.

Furthermore, the negative association between CCC and ROE can be explained through the negative impact of ADI on ROE and the positive impact of ADP on ROE. As speeding up the period of ADI will minimize the costs of maintaining inventory in addition to extending the period of ADP leads to an

increase in liquidity which can be employed in several profitable ways. Thus, the shorter ADI and the longer ADP are associated with achieving higher ROE. Hence, the sub hypotheses (H_{2a}) is rejected because ADR has an insignificant impact on ROE, whereas (H_{2b} and H_{2c}) are accepted.

Also, the negative impact of CCC on EPS can be justified by the negative association between ADR and EPS. As, reducing ADR from customers is associated with accomplishing higher EPS. Thus, ADR is considered the main driver for the negative association between CCC and EPS. Hence, H_{3a} is accepted, while H_{3b} and H_{3c} are rejected because ADI and ADP have an insignificant impact on EPS. These results are inconsistent with Bagh et al. (2016) who found that ADR has a significant positive association with EPS, while ADI has a significant negative association with EPS.

Therefore, it can be concluded that all components of WCM (ADR, ADI and ADP) significantly affect a firm's FP. Then, the efficient management of WC that is associated with achieving higher FP can be achieved by accelerating the period of CCC by shortening the period of ADR from the customer as possible without harming the relationship with customers due to using strict collection methods. Furthermore, reducing the ADI period to a reasonable minimum limit without running out of inventory avoids losing sales opportunities and delays ADP as much as possible without affecting the company's credit rating. As a result, companies can use this cash flow to invest in more profitable assets rather than current assets.

Further, the findings outlined that practicing EM moderates the association between WCM and FP measured by ROA. These findings indicate that the involvement of EM practices in the process of managing WC strengthens the association between CCC and ROA. In other words, the association between CCC and ROA increases if the involvement of EM increases. The misalignment of interest between managers and shareholders could occur in the process of WCM, which could encourage managers to use their discretion on WCM. Managers made use of WC accounts which includes current assets accounts in EM, so the involvement in EM affects positively the association between WCM and ROA. Practicing EM through DA is employed by managers to reflect better management of firm's FP or delay a portion of good current earnings to the subsequent year to get a bonus or for better remuneration. Thus, the fourth

hypothesis is accepted which stated that EM strengthens the association between CCC and ROA.

Regarding to H_5 and H_6 hypotheses are rejected because the results concluded that EM doesn't moderate the association between WCM and FP measured by ROE and EPS. In other words, practicing EM doesn't have any impact on the association between WCM with ROE and EPS. That indicates that EM is not a moderator variable but is only considered an independent variable.

6. Conclusion

The main objectives of this research are to empirically study the influence of WCM and its components on FP measured by ROA, ROE, and EPS and investigate the impact of EM practices on the association between WCM and FP on the Egyptian registered companies.

Prior literature reveals that WCM plays an essential role in enhancing firm's FP. However, there is no general agreement among previous studies concerning the impact of CCC as a comprehensive measure of WCM on a firm's FP. Several studies confirmed that CCC is negatively related to FP, implying that the shorter the period of CCC , the higher the FP (Tran et al. 2017; Dadzie 2017; Pais & Gama 2015; Yazdanfar & Öhman 2014; Ukaegbu 2014; Nobanee et al. 2011; Lazaridis & Tryfonidis 2006; Deloof 2003). On the contrary, other studies found that CCC is positively related to FP, implying that longer CCC is associated with achieving higher FP (Akoto et al. 2013; Abuzayed 2012; Sharma & Kumar 2011; Gill et al. 2010; Nobanee 2009). While some studies found that CCC has an insignificant effect on FP including Mbawuni et al. (2016), Afrifa (2013) and Samiloglu & Demirgunes (2008). In addition, previous studies show inconsistent results about the impact of each component of WC which are ADR, ADI, and ADP on a firm's FP.

Moreover, WCM is affected by EM practices in WC accruals which are considered the easiest way for managers to make EM in these accounts due to the flexibility in IFRS. Therefore, the manipulation in these accounts affects the way of how managers will make decisions regarding the management of WC. Consequently, the involvement of EM practices in the process of WCM would positively or negatively affect FP depending on the intention of the firm's management behind these practices and how the firm's stakeholders interpret these earnings.

The present research results revealed that CCC used as a comprehensive measure for WCM has a significant negative influence on a firm's FP measured by ROA, ROE, and EPS. As reducing the duration of this cycle will enable the company to carry out its activities efficiently with the least possible amount of cash invested. Therefore, the unutilized cash balance can be directed from CCC to be used in long-term investments with higher profitability, or to pay off long-term loans or to use it as cash distributions for shareholders.

Further analysis indicated that ADR and ADI significantly negatively impact ROA. This implies that ADR and ADI are considered the main drivers of the negative association between CCC and ROA. Thus, shortening the period of ADR and ADI are associated with achieving higher ROA. In addition, it is found that there is a significant negative association between ADI and ROE, but there is a significant positive association between ADP and ROE. This implies that ADI and ADP are the main drivers of the negative association between CCC and ROE. Hence, shortening the ADI period and lengthening the ADP period is responsible for shortening the period of CCC, which is associated with achieving higher ROE. Additionally, it is found that ADR significantly has a negative impact on EPS. This indicates that ADR is the only component that drives the association between CCC and EPS. Thus, shortening the period of ADR is responsible for shortening the period of CCC which is associated with achieving higher EPS. Hence, these results suggest that efficient management of WC can be achieved as follows; (1) shortening ADR to a reasonable minimum without using strict collection methods that may lead to losing some of key customers. (2) Decreasing ADI to an acceptable level without running out of inventory which can lead to lose sales opportunities. (3) Lengthening the period of ADP as possible without affecting the company's credit rating.

Finally, the results show that the involvement of EM practices moderates the association between WCM and ROA. Furthermore, it is indicated that the involvement in EM practices strengthens the association between WCM and ROA. Thus, managers use EM practices in the process of WCM to improve a firm's FP measured by ROA.

The outcomes of the current study could not be generalized due to several limitations. First, the other proxies for the primary variables employed in this research (WCM, EM and FP) are not considered (WCM, EM and FP). Second, because financial institutions such as banks and financial services companies

have capital structures that are distinct from those of non-financial enterprises, the sample used in this study is limited only to non-financial organizations. Finally, the sample excludes small and medium-sized businesses in favor of just the big companies that are registered on the EGX.

For forthcoming research, the researcher suggests expanding the other determinants of WCM, such as corporate governance factors, ownership structure, and capital structure. In addition, future studies could employ other proxies for EM and WQM. Furthermore, apply the study in the financial sector and small and medium-sized companies.

References

Abdulazeez, D.A., Baba, N.A., Fatima, K.R. and Abdulrahaman, Y., 2018. Working Capital Management and Financial Performance of Listed Conglomerate Companies in Nigeria. *Journal of Accounting, Finance and Auditing Studies*, 4(2), pp.49-66.

Abdussalam, A.G. and Darun, M., 2017. Exploring the Relationship between Working Capital Management, Profitability and Capital Structure. *Accounting and Finance Review (AFR)*, 2(1), pp.38-45.

Abuzayed, B., 2012. Working Capital Management and Firms' Performance in Emerging Markets: The Case of Jordan. *International Journal of Managerial Finance*, 8(2), pp.155–179.

Adam, A.M., Quansah, E. and Kawor, S., 2017. Working Capital Management Policies and Returns of Listed Manufacturing Firms in Ghana. *Scientific Annals of Economics and Business*, 64(2), pp.255-269.

Adamu, Y., 2016. Effects of Working Capital Management on the Financial Performance of the Pharmaceutical Firms in Nigeria. *International Journal of Economics, Commerce and Management*, 10(4), pp. 349, 367.

Afrifa, G.A. and Padachi, K., 2016. Working Capital Level Influence on SME profitability. *Journal of Small Business and Enterprise Development*, *23*(1), pp.44-63.

Afza, T. and Nazir, M.S., 2007. Is It Better to Be Aggressive or Conservative in Managing Working Capital? *Journal of Quality and Technology Management*, 3(2), pp.11-21.

Ajaya, K., and Swagatika, N., 2018 "Working Capital Financing and Corporate Profitability of Indian Manufacturing Firms". *Management Decision*, 56(2), pp.441-457.

Akoto, R.K., Awunyo-Vitor, D. and Angmor, P.L., 2013. Working Capital Management and Profitability: Evidence from Ghanaian Listed Manufacturing Firms. *Journal of Economics and International Finance*, 5(9), PP. 373-379.

AL-Taleb, G, Al – Zoued, A, and Al – Shubiri, F., 2010. The Determinants of Effective Working Capital Management Policy: A case Study on Jordan. *Interdisciplinary Journal of Contemporary Research in Business*, 2(4), pp. 248-256.

Amponsah-Kwatiah, K. and Asiamah, M., 2020. Working Capital Management

and Profitability of Listed Manufacturing Firms in Ghana. *International Journal of Productivity and Performance Management*, 70(7), pp. 1751-1771.

Ashhari, Z., 2012 Working Capital Management, Firm Performance and Earnings Management of Public Listed Companies in Malaysia and Thailand *(Unpublished PhD thesis)*. Universiti Putra Malaysia.

Bagh, T., Nazir, M.I., Khan, M.A., Khan, M.A. and Razzaq, S., 2016. The Impact of Working Capital Management on Firms Financial Performance: Evidence from Pakistan. *International Journal of Economics and Financial Issues*, 6(3), pp.1097-1105.

Baños-Caballero, S., García-Teruel, P.J. and Martínez-Solano, P., 2012. How Does Working Capital Management Affect the Profitability of Spanish SMEs?. *Small Business Economics*, 39(2), pp.517-529.

Boachie, C. and Mensah, E., 2022. The Effect of Earnings Management on Firm Performance: The Moderating Role of Corporate Governance Quality. *International Review of Financial Analysis*, 83(1), pp.1-16.

Brealey, R., Myers, S., & Marcus, A., 2015. *Fundamentals of Corporate Finance*. 8th edition, McGraw hill education, New York.

Chakroun, A., and Amar S., 2019. The Study of the Impact of Earnings Management on Financial Performance in the Euro-Continental Accounting Model: Evidence from France. *Conference Paper*, Nouvelles Perspectives de Recherche en Finance à l'ère de la Transformation Digitale, France, PP. 1-23.

Dadzie, E. and Wiafe, N., 2017. Working Capital Management and Profitability of Manufacturing Firms in Ghana. *Journal of Excellence, Leadership, & Stewardship*, 6(2), pp.30-42.

Dechow, P.M. and Dichev, I.D., 2002. The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. *The Accounting Review*, 77(1), pp.35-59.

Dechow, P.M., Sloan, R.G. and Sweeney, A.P., 1995. Detecting Earnings Management. *The Accounting review*, 70(2), pp.193-225.

Deloof, M., 2003. Does Working Capital Management Affect Profitability of Belgian Firms?. *Journal of Business Finance & Accounting*, 30(3-4), pp.573-588.

Deari, F., Kukeli, A., Barbuta-Misu, N. and Virlanuta, F.O., 2022. Does Working Capital Management Affect Firm Profitability? Evidence from European Union Countries. *Journal of Economic and Administrative Sciences*, 38(3), pp.1-21.

Falope, O.I. and Ajilore, O.T., 2009. Working Capital Management and Corporate Profitability: Evidence from Panel Data Analysis of Elected Quoted Companies in Nigeria. Research. *Journal of Business Management*, 3(3), pp.73-84.

García-Teruel, P.J. and Martínez-Solano, P., 2007. Effects of Working Capital Management on SME Profitability. International Journal of Managerial Finance. 3(2), pp. 164-177.

Gill, A., Biger, N. and Mathur, N., 2010. The Relationship between Working Capital Management and Profitability: Evidence from the United States. *Business and Economics Journal*, 10(1), pp.1-9.

Gomes, D.F.N., 2013. How Does Working Capital Management Affect Firms´ Profitability? Evidence from Portugal *(Unpublished PhD thesis)*. Universidade de Lisboa (Portugal).

Hassani, M. and Tavosi, A.R., 2014. To Survey the Effect of Working Capital Policies (Investing and Financing) on Profitability Risk (Evidence from Tehran Stock Exchange). *Journal of Investment and Management*, 3(1), pp.30-36.

Karacaer, S., MA, 2009. An Analysis of the Impact of Working Capital Accruals on Corporate Earnings in Turkey. *Journal of Finance and Economics*, 12 (29), pp. 160-171.

Kasozi, J., 2017. The Effect of Working Capital Management on Profitability: A case of Listed Manufacturing Firms in South Africa. *Investment Management and Financial Innovations*, 14(2), pp.336-346.

Kothari, S., Leone, A.J. and Wasley, C.E. (2005), "Performance Matched Discretionary Accrual Measures", *Journal of Accounting and Economics*, 39(1), pp. 163-197.

Laghari, F. and Chengang, Y. (2019), "Investment in working capital and financial constraints", *International Journal of Managerial Finance*, 15(2), pp.164-190.

Lazaridis, I. and Tryfonidis, D., 2006. Relationship between Working Capital

Management and Profitability of Listed Companies in the Athens Stock Exchange. *Journal of Financial Management and Analysis*, 19(1), pp.1-12.

Li, C., Yang, Y., and Cheng, K., 2014. Working Capital Management and Estimations of Discretionary Accruals. *NTU Management Review*, 26(3), PP.63– 92.

Mansoori, D.E. and Muhammad, D., 2012. The Effect of Working Capital Management on Firm's Profitability: Evidence from Singapore. *Interdisciplinary Journal of Contemporary Research in Business*, 4(5), pp.473-486.

Martínez-Ferrero, J., 2014. Consequences of Financial Reporting Quality on Corporate Performance: Evidence at the International Level. *Estudios de Economía*, 41(1), pp.49-88.

Matsunaga, S.R. and Yeung, P.E. (2008), "Evidence on the Impact of a CEO's Financial Experience on the Quality of the Firm's Financial Reports and Disclosures", *SSRN Electronic Journal*, pp.1-40.

Mbawuni, J., Mbawuni, M.H. and Nimako, S.G., 2016. The Impact of Working Capital Management on Profitability of Petroleum Retail Firms: Empirical evidence from Ghana. *International Journal of Economics and Finance*, 8(6), pp.49-62.

Nijam, H.M., 2016. Cash Conversion Cycle, Its Properties and Profitability: Evidence from Listed Hotel Companies in Sri Lanka. *Research Journal of Finance and Accounting*, 7(1), pp.23-32.

Niresh, J.A., 2012. Working Capital Management and Financial Performance of Manufacturing Sector in Sri Lanka. *European Journal of Business and Management*, 4(15), pp.23-30.

Nobanee, Abdullatif, M. and AlHajjar, M., 2011. Cash Conversion Cycle and Firm's Performance of Japanese Firms. *Asian Review of Accounting*, 19(2), pp.147-156.

Nobanee, H., 2009. Working Capital Management and Firm's Profitability: An Optimal Cash Conversion Cycle. *Available at SSRN, 147123*.

Oyedele, O., Adeniran, J. and Oluwatosin, O., 2017. Working Capital Management and Financial Performance: Evidence from Nigerian Breweries PLC. *International Journal of Innovative Finance and Economics Research* 5(3), pp.29-36.

Padachi, K., 2006. Trends in Working Capital Management and its Impact on

Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms. *International Review of Business Research Papers*, 2(2), pp.45-58.

Pais, M.A. and Gama, P.M., 2015. Working capital management and SMEs profitability: Portuguese evidence. *International journal of managerial finance*, 11(3), PP. 341-358.

Peasnell, K.V., Pope, P.F. and Young, S., 2005. Board Monitoring and Earnings Management: Do Outside Directors Influence Abnormal Accruals?. *Journal of Business Finance & Accounting*, 32(8), pp.1311-1346.

Quadri, Y.O., 2018. Impact of Working Capital Management on Profitability of Consumer Goods Firms in Nigeria *(Unpublished PH.D. Dissertation)*. Kwara State University, Nigeria.

Raheman, A. and Nasr, M., 2007. Working Capital Management and Profitability–Case of Pakistani Firms. *International Review of Business Research Papers, 3(1),* pp.279-300.

Ren, T., Liu, N., Yang, H., Xiao, Y. and Hu, Y., 2019. Working Capital Management and Firm Performance in China. *Asian Review of Accounting*, 27(4), pp. 546-562.

Ross, S. A., Westerfile, R. W., & Jordan, B. D. 2010. *Fundamentals of Corporate Finance*. 9th edition, McGraw-Hill Irwin.

Samiloglu, F. and Demirgunes, K., 2008. The Effect of Working Capital Management on Firm Profitability: Evidence from Turkey. *The International Journal of Applied Economics and Finance*, 2(1), pp.44-50.

Sanusi, M. S, 2006. An Evaluation of Working Capital Policies and their Impact on Profitability of Firms *(Unpublished Master Thesis)*. Ahmadu Bello University, Zaria, Nigeria.

Sathyamoorthi, C.R., Mapharing, M. and Selinkie, P., 2018. The Impact of Working Capital Management on Profitability: Evidence from the Listed Retail Stores in Botswana. *Applied Finance and Accounting*, 4(1), pp.82-94.

Sawarni, K.S., Narayanasamy, S. and Ayyalusamy, K., 2020. Working Capital Management, Firm Performance and Nature of Business: An Empirical Evidence from India. *International Journal of Productivity and Performance Management*, 70(1) pp.179-200.

Schipper, K., 1989. Commentary on Earnings Management. Accounting

Horizons, 3(4), pp.91-102.

Sharif, M.A. and Islam, M.R., 2018. Working Capital Management as A Measurement Tool for Profitability: A study on Pharmaceutical Industry in Bangladesh. *Journal of Finance and Accounting*, 6(1), pp.1-10.

Sharma, A.K. and Kumar, S., 2011. Effect of Working Capital Management on Firm Profitability: Empirical Evidence from India. *Global Business Review*, 12(1), pp.159-173.

Tran, H., Abbott, M. and Jin Yap, C., 2017. How Does Working Capital Management Affect the Profitability of Vietnamese Small-and Medium-Sized Enterprises?. *Journal of Small Business and Enterprise Development*, 24(1), pp.2-11.

Ukaegbu, B., 2014. The Significance of Working Capital Management in Determining Firm Profitability: Evidence from Developing Economies in Africa. *Research in International Business and Finance*, 31(1), pp.1-16.

Vallalnathan, N. and Joriye, G., 2013. Impact of Working Capital Management on the Profitability of Cooperative Unions in East Showa, Ethiopia. *Greener Journal of Business and Management Studies*, 3(6), pp.251-269.

Wang, Z., Akbar, M. and Akbar, A., 2020, "The Interplay between Working Capital Management and Firm's Financial Performance across the Corporate Life Cycle", Sustainability, 12(4), pp. 1661.

Yahaya, A., 2016. Effects of Working Capital Management on the Financial Performance of the Pharmaceutical Firms in Nigeria. *International Journal of Economics, Commerce and Management*, 5(4), pp 349-367.

Yakubu, I.N., Alhassan, M.M. and Fuseini, A.A., 2017. The Impact of Working Capital Management on Corporate Performance: Evidence from Listed Non-Financial Firms in Ghana. *European Journal of Accounting, Auditing and Finance Research*, 5(3), pp.68-75.

Yazdanfar, D. and Öhman, P., 2014. The Impact of Cash Conversion Cycle on Firm Profitability. *International Journal of Managerial Finance. 10(4)*, pp 442-452.