UNIVERSITY OF GHANA

COLLEGE OF HUMANITIES

WORKING CAPITAL MANAGEMENT AND THE PROFITABILITY OF LOCAL AND FOREIGN NON-FINANCIAL FIRMS LISTED ON THE GSE.

BY

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DECLARATION

I, Selorm Zigah, declare that this work is the result of my own research. It has not been previously presented for an academic award. All references used in the work have been fully acknowledged. Notwithstanding these, any remaining shortcomings in the report are solely mine.

……. ……

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CERTIFICATION

We hereby certify that this thesis was supervised in accordance with procedures laid down by the University of Ghana.

…….. ……..

DR AGYAPOMAA GYEKE –DAKO DATE

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PROF JOSHUA YINDENABA ABOR DATE

(SUPERVISOR)

DEDICATION

I dedicate this thesis to God Almighty, Maker of heaven and earth. I also dedicate this piece to my mother, Janet A. Anyomi, my siblings Isaac Zigah, Florence Zigah and Mawuse Zigah and to my special friend Elikplim Apedo. I also dedicate this work to Mr. Frederick Ewusie Yamoah, Ms. Angela Alu, Mr. Akpene Kpedo, Mr. Cristopher Kwablah, Mr. Kodzi Samuel, Mr.Francis Amofah Nkrumah for their valuable roles played in my life.

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LIST OF ABBREVIATIONS

ACP	Account Collection Period
AEVA	Adusted Economic Value Added
AEX	Amsterdan Trade Index
AMS	Amsterdam Midkap
AP	Account Payable
APM	Arbitrage Pricing Model
APP	Account payables period
AR	Account Receivable
ARP	Account Receivable Period
CA	Current Assets To Total Assets
CAPM	Capital Asset Pricing Model
CEO	Chief Executive Officer
CCC	Cash Conversion Cycle
CLs	Current Liabilities
CR	Current Ratio
CT	Current Liabilities To Total Asset Ratio
DSO	Days Sales Outstanding
EBIT	Income Before Interest And Tax
ElecStab	Electricity Stability
EV	Enterprise Value
FEM	Fixed Effect Model
FirmSize	Firm Size
FV	Firm Value

GDP	Gross Domestic Product
GHs	Ghana Cedis
GLS	General Least Square
GSE	Ghana Stock Exchange
ICP	Inventory Conversion Period
IP	Inventory Period
INV	Inventory
JSE	Johannesburg Stock Exchange
LN	Natural Logarithm On Sale
MVA	Market Value Added
NIM	Net Interest Margin
NYSE	New York Stock Exchange
NOP	Net Operating Profit
NSE	Nigerian Stock Exchane
NTC	Net Trade Cycle
NWC	Net Working Capital
NWC/ TOA	Net Working Capital to Total Assets
OC	Operating Cycle
OLS	Ordinary Least Square
RCP	Receivable Collection Period
REM	Random Effect Model
ROA	Return On Assets
ROE	Return Of Equity
SC	Stock To Current Asset Ratio
SMC	Small and Medium Enterprises

UG	University Of Ghana
UK	United Kingdom
US	United States
USD	United State Dollar
VIF	Variance Inflation Factor
WC	Working Capital
WCCC	Weighted Cash Conversion Cycle
WCP	Working Capital Policy
WIP	Work in Progress

ABSTRACT

There is ongoing conversation among researchers and practitioners on the role working capital variables play in determining the profitability of firms. The findings of previous research works have proven to be far from conclusive, having shown that the role of working capital management can, at best, be context specific. This means that there is the need to examine the relationship between working capital management and profitability in different contexts. While extant literature has shown research on this relationship, studies in Ghana have not considered what the differences will be for/in this relationship for local and foreign firms. The purpose of this study was, thus, to determine the relationship between working capital management and firm profitability in Ghana using data on the Ghana Stock Exchange (GSE) listed non-financial firms and compare the results for local and foreign firms. The study used the fixed effects technique to estimate a model on a panel of eighteen (18) firms from the period 2003 to 2016.

The study found a positive relationship between Account Payables Period (APP) and Return on Assets (ROA) for all samples, that is, the full sample and the local and foreign sub-samples. This relationship was however only significant for the foreign sample. The relationship between the Inventory Conversion Period (ICP) and ROA was found to be negative for all samples. These relationships were not statistically significant. The results for Receivable Collection Period (RCP) differed from one sample to another. Whilst it was positive in the foreign and local samples, it was negative in the full sample. It was, however, statistically significant only in the local sample. Finally, the results also show that Cash Conversion Cycle (CCC) has a negative relationship with ROA for all samples.

These results led to the following conclusions: First, working capital management has limited effects in determining the profitability of the listed firms that were sampled for this study. Secondly, good working capital management has a more beneficial effect on the profitability of foreign firms than on local firms. Thirdly, the only working capital variable that can be said to be able to improve profitability of local firms is the receivables collection period. Finally, the study concludes that the working capital management practices that work for local firms listed on the GSE do not yield the same results as for their foreign counterparts. It is recommended that foreign firms should negotiate for more lenient and flexible trade credit periods with their creditors. Local firms, on the other hand, should restrict the trade credit period allowed to their customers. Foreign firms should also aim at achieving overall shorter operating cycles in order to achieve the optimum level of profitability. Local firms should pursue firm growth in order to enhance their profitability

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Working Capital (WC) is the excess of a firm's current assets over its current liabilities (Sagan, 1955). A firm's asset can be defined as the benefits that are due to the firm as a result of events, such as contractual obligations and sale of goods, that occurred in the past and from which the firm is expected to obtain benefits in the future (International Accounting Standards Board [IASB], 2010). Assets also include resources that the firm controls as a result of past events that it expects to derive benefits from in the future. Some of these benefits that accrue from assets may be realised within one year, while others may be accrued in more than one year. The assets that these short-term benefits relate to are known as current assets and these are the assets considered as working capital. On the other hand, liabilities are regarded as the obligations that have arisen due to past events and are expected to result in an outflow of resources from the firm to another entity. Those liabilities that are due within a year from the end of the accounting period are referred to as current liabilities and these are important for working capital. The difference between these two items (i.e. total current assets and total current liabilities) is what is termed working capital or net current assets. Finance practitioners regularly review the balance of working capital to ensure that their firm stays afloat and is able to settle its obligations in due time. The processes involved in ensuring that the firm stays afloat and liquid at all times is what practitioners term Working Capital Management (WCM). Thus, Working Capital Management consists of matching a firm's short-term assets and liabilities as they fall due. Firms that fail to manage their working capital well will inevitably become insolvent. Hence, efficient management of working capital is essential for the survival of firms in the long run (Bagchi,

Chakrabarti, & Basu Roy, 2012). It is partly because of this that working capital management is considered a critical part of the financial management of firms, together with capital budgeting and capital structure (Ansah, 2011; Deloof, 2003b; Edmunds, 1983; Kesimli & Gunay, 2011; Malik & Bukhari, 2014; Shubita, 2013).

1.2 Statement of the Problem

Researchers have studied various aspects of working capital and have attempted to explain how they affect the firm's varied objectives (Aregbeyen, 2013; Goel, Bansal, & Sharma, 2015; Kiarie, 2013; Viskari, Lind, Kärri, & Schupp, 2012). One area that existing studies have mainly focussed on is the role Working Capital Management plays in improving the performance of firms in the non-financial sectors.

In the context of Ghana, there are few studies that have examined the WC-performance relationship. These studies have focussed on manufacturing firms (Korankye & Adarquah, 2013; Kwaku & Mawutor, 2014), SMEs (Agyei-Mensah, 2012; Attom, 2016) and listed firms (Agyemang & Asiedu, 2013; Fiador, 2016; Korankye & Adarquah, 2013; Kwaku & Mawutor, 2014). Notwithstanding the existence of these studies, it appears little is known, if any, about the differences in the relationship between the effects of WCM and performance of local and foreign firms. This is considered to be an interesting comparison for a number of reasons (Barine, 2012; Belt & Smith, 1991; Khoury, Smith, & MacKay, 1999; Moradi, Salehi, & Arianpoor, 2012).

First, foreign firms are generally bigger, and they have access to relatively cheaper funds, both in the local market and in their home country. Moreover, many of the firms have strong parent companies that support them in difficult times, and this has the potential of making them more

tolerant to risk (Anginer, Cerutti, & Pería, 2014; Jinjarak, 2007). Also, these firms are usually able to access trade credit more easily due to the perception that they are more creditworthy or ethical (Sweeney, Arnold, & Pierce, 2010). Foreign firms, however, also have exposure to currency and political risks which may adversely affect their bottom line (Cooper, 1984; García-Canal & Guillén, 2008; Sarno & Valente, 2005).

Local firms, on the other hand, have lower capital and so, are usually smaller and participate in the low end of their industries (Domeher, Frimpong, & Mreku, 2014; Kayanula & Quartey, 2000). They are usually owned by families (mainly individuals in the context of Ghana) who rely extensively on their networks for trade credit (Tetteh & Frempong, 2007). They usually do not have access to formal forms of finance options because they do not keep organised (or complete) accounts and hence, struggle to access funds from the formal financial system (Nkuah, Tanyeh, & Gaeten, 2013; Ricky-Okine, Amankwaa, & Owusu, 2015; Schicks, 2011). In addition, local firms are perceived to be more likely to default and this compounds their limited access to financing options; when they have access, it comes with tougher conditions than for foreign firms (Abor, Biekpe, Emerging, Aug, and Taylor, 2007; Domeher , Frimpong, and Mreku., 2014; Kayanula & Quartey, 2000; Schicks, 2011).

These differences have important implications for Working Capital Management. First of all, firms that have limited access to financing will pay higher cost for finance, partly because poor record keeping means that there is no documented track record for many local firms. High cost of financing will have to be managed, and this is a Working Capital Management function. For foreign firms, political and currency risks will require pragmatic action to control, which are functions of working capital and treasury management. It is against this background that this study contributes to the WC-Performance literature by examining the differences between

foreign and local firms with a focus on non-financial firms that are listed on the Ghana Stock Exchange (GSE). Moreover, Ghana is a country which has a significant diversity of foreign firms that have thrived in Ghana for many years; this provides a good basis for comparing these foreign firms with the indigenous firms.

1.3 Purpose of the Research

The purpose of this study was to determine the relationship between WCM and profitability of firms listed on the GSE and to ascertain if this relationship differs among local and foreign firms.

1.4 Objectives of the Study

The objectives of the study are:

i. To determine the effect of WCM on firm profitability of GSE listed non-financial firms.

ii. To determine the difference between the effects of WCM on firm profitability for local and foreign listed non-financial firms.

1.5 Research Questions

The study seeks to address the following questions:

i. What is the effect of WCM on firm profitability among GSE listed firms?

ii. What is the difference between the effects of WCM on local and foreign listed non- financial firms' profitability?

1.6 Significance of the Study

This study is useful given that the local firms in Ghana are relatively young and the very few existing literature have documented their peculiarities and what Working Capital Management practices work best for them. They, thus, often follow practices used by foreign firms and firms in other countries. A key implication of our findings is that any such best practices are largely

applicable to the category of firms who follow those practices. The findings have, to some extent, reiterated conclusions by previous authors who conducted comparative studies in other countries and our findings suggest that what works for one category of firms does not necessarily work for another.

1.7 Limitations of the study

The main challenge encountered in the study is the issue of data availability. This is a common challenge for researchers who examine firms' characteristics in Ghana. This limited the scope of the study and the range of analytical techniques that could have been used. For instance, the study was limited to listed firms because it was difficult getting data for non-listed firms. The data was cleaned appropriately and the relevant data management techniques applied before using them for the analysis. Notwithstanding this challenge, the results are reliable and relevant.

1.8 Chapter Outline

This research report is organised as follows. Chapter one serves as an introduction to the report by giving a background to the study and stating the research problem as well as the purpose, objectives, and questions the study sought to address. It also provides an insight on the significance, limitation, and scope of the study. Chapter two presents a review of previous studies on Working Capital Management and firm profitability. Chapter three presents and discusses the empirical strategy, the data and methods of analysing the data. The results of the analysis are presented and discussed in chapter four, whilst the summary of the findings, conclusions and recommendations are presented in the final chapter, chapter five. The report also includes a list of all references and an appendix of tables.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of relevant literature on Working Capital Management and firm profitability. The chapter begins with a review of theories and concludes with a review of empirical studies. Under the empirical review, the studies reviewed are organised based on the direction of the relationships found by the author.

2.2 Theoretical Review

This section presents a review of theories that are relevant to the concept of Working Capital Management and firm profitability. There is not a single theory that can be regarded as being capable of explaining both concepts. Several theories exist that explain aspects of each of these concepts. This section, thus, reviews some of these theories which are considered to be relevant for this study. First, the literature review discusses theories that explain cash management and then proceeds to discuss theories that explain firms' operating cycle and performance.

2.2.1 Working Capital Management Model

- **The Baumol Cash Model as Management Model**

The Baumol Cash Management Model argues that it is possible to minimise the cost associated with management of firm liquidity by choosing an optimal level of cash to be held at any point in time while benefiting from excess liquidity. The model assumes that the firm holds a portfolio of marketable securities which can easily be converted into cash (Baumol, 1952). With this model, cash is assumed to start from a replenishment level, and then declines smoothly to a zero

value that is immediately replenished at a trading cost (Cornett, McNutt, & Tehranian, 2009). In this model, the financial manager exploits the trade-off between cash and marketable securities to enhance firm performance (Cornett, McNutt, and Tehranian, 2009; Pandey, 2008). Though this model helps to explain the Cash Management (CM) under WCM, it suffers from the unrealistic assumption of a constant, perfect disbursement rate for cash, no cash inflows, and not allowing for any safety stock of extra cash to buffer the firm against an unexpectedly high demand for cash (Cornett et al., 2009; Pandey, 2008).

- **The Miller-Orr Model**

The Miller-Orr Model is considered to be more practical than the model suggested by Baumol. The Miller-Orr Model manages to achieve a reasonable degree of realism by asserting that the adequacy of cash and current assets, together with their effective handling, virtually determines a firm's performance (O'Donnell & Goldberger, 1964). Specifically, the Miller-Orr Model suggests that when the cash balance reaches an upper limit, firms must buy sufficient securities to return their cash balance to normal level and then sell securities to bring the balance back to a return point when the cash balance reaches a lower limit to be efficiently managed by their WC in a bid to enhance their performance (Pandey, 2008). The theory posits that firms which do not maintain cash at an ideal level will result in stock outs, interruption in operations (O'Donnel & Goldberger, 1964), reckless purchasing of raw materials, and increased cost due to mishandling, waste, and theft (Padachi, 2006). This model is, however, unable to explain the situation where profitable firms with no liquid cash are forced into winding up by their creditors.

- **The Theory of Risk and Return**

A common theory that underlies finance is the theory of Risk and Return. This theory states that there is a trade-off between the profit a firm makes and the risk it bears. The theory suggests that there is a direct relationship between the amount of risk a firm bears and the profit it makes. This implies that firms which take more risks are more profitable (Brealey, Myers, & Allen, 2008; Mukherji, Desai, & Wright, 2008). The theory generally accepts that firms will seek to enhance their profitability when they perceive that they will gain, by risking their inputs within the environment in which they operate.

- **The Operating Cycle Theory**

The Operating Cycle Theory is a theory which explains multiple aspects of Working Capital Management. It explains that the time it takes for a firm to convert raw materials, work in progress, and ultimately, the finished goods into sales and receive cash reflects its working capital management practice and is a useful determinant of their performance (Richard & Laughlin, 1980). This theory also reveals that changes in collection and credit policy have a direct effect on annual sales, account receivables balance, and firm performance. The theory helps financial managers and financial analysts to appreciate that at an intuitive level, all working capital related investments do not have the same life expectancy, and that their transformation rate to usable flows of liquidity is always not at the same speed (Richards & Laughlin, 1980). It helps explain variations in the extent of efficiency on both Working Capital Management and firm performance within the same industry and across industries.

2.2.2 Theories on Firm Performance

Various factors account for firm performance and these determinants are represented by several theories (Wamugo, Fellow, Stephen, & George, 2014). However, the main schools of thought on firm performance are broadly divided into (a) pro-firm and (b) anti-firm perspectives that are sub-divided into five schools of (i) classical economists; (ii) behaviourist economists, who emphasise the role of managers on increases in firm size; (iii) the Stochastic Theory, which assumes that firm growth follows a stochastic process; and (iv), models of learning and selection, which are linked to the stochastic firm growth theory and (v) the Resources Push Theory, that accepts that competitive advantage lies in the possession of resources and routines, organisational capabilities or core competencies (Tahir & Anuar, 2016).

While the pro-firm school of thought accepts that firms help to promote economic growth and reduce poverty levels and thus, must necessarily be efficient, the anti-firm school of thought posits that firms stimulate competition and entrepreneurship and, aside from being required to be efficient, performing firms must as well be innovative, adaptable and productive in general (Ayyagari, Beck, & Demirguc-Kunt, 2007; Beck, & Demirguc-Kunt, 2006). Additionally, Beck et al they accept that a conducive business environment tends to inure to the benefit of all firms as long as there are low entries and exit barriers, well defined property rights, effective contract enforcement, and access to finance (Akoten, Sawada, & Otsuka, 2006; Fafchamps, 1997).

2.2.2.1 Behavioural Theories

Behavioural Theorists address the shortfalls in the classical economic theory on firm performance. Behavioural theory says that firms can be oversized due to the agency problem

associated with ownership and management of firms. Behaviourist economists (Baumol, 1952, 1962; Chandler, 1970; Penrose, 1952, 1955) posit that managers' characteristics, objectives, and actions are determinants of firm performance because these determine their ability to coordinate and inspire confidence and security in their subordinates. Theorists from this school of thought accept that rapid growth does not necessarily mean efficiency, because it can also imply a reduction in corporate efficiency (Penrose, 1955; Williamson, 1967). The Theorists theory highlights the importance of knowledge assets and processes of co-ordination within a firm as drivers of firm performance (Penrose, 1955). However, this perspective has drawbacks such as the generality of managerial abilities and a lack of empirical studies that investigate the link between knowledge structures and firm performance.

2.2.2.2 Stochastic Factor Theory

The Stochastic Theory seeks to explain the existence and persistence of the stochastic factors that account for firm performance. Three of the main stochastic growth models are postulated by Kalecki (1945), Gibrat (1931), and Champernowne (1973) as cited by Sutton, (1997). These theories converge on the fact that there is no link between firm size and firm performance because firm performance is a product of the interplay between firm size and the environment in which a firm operates. The model, thus, accepts that firm performance hinges on factors that can cause the randomness of firm growth. Other authors like Ijiri and Simon (1977) and Scherer (1970), state that stochastic factors have a higher impact on firm performance than firm size has. This approach has been criticised in the literature by Scherer (1970) for its assumption that firm performance follows a random walk process for which factors like luck, the hiring of key executives, research and new product development decisions, legal disputes involving critical patents, and the choice of an advertising campaign theme have high weights.

2.2.2.3 The Resources Constraints Theories

The Resources Constraints Theorists suggest that there are different types of firm behaviour and different levels of performance. Consequently, firm performance varies on the basis of owners' control and access to production inputs. It says that the ultimate goal of a firm is to perform well over time in growing stakeholders' value (Zellweger & Nason, 2008). However, this explanation on firm performance fails to account for the role of technology and shocks in explaining why firm performance is not uniform within and across industries.

2.2.3 Components of Working Capital Management

2.2.3.1 Cash Conversion Cycle (CCC)

CCC, as a measure of the efficiency of WCM, represents the duration of time that cash is tied up in accounts receivables and inventory (Lind, Pirttilä, Viskari, Schupp, & Kärri, 2012). It reflects the net time between cash expenditures on a firm's purchase of a product input and clients' payments from product sales (Richards & Laughlin, 1980). Ross, Westerfield, and Jordan (2008), like Gentry, Vaidyanathan, and Lee (1990), postulate that CCC stands for the number of days funds are tied up to inventories and receivables less the number of days that payment to vendors is deferred. Stewart (1995) identifies CCC as the average days required to turn funds invested in raw material into funds collected from a client. Moss and Stine (1993) take CCC to mean the length of time between cash payment for purchase of resalable goods and collection of accounts receivable generated by sale of these goods.

Following (H.P. Dong & Su, 2010; Gill, Biger, & Mathur, 2010; Gitman, 2009; Pieterson, 2012), CCC is mathematically expressed as:

CCC = Operating Cycle (OC) – Average Payable Period (APP) ≡ Average Collection Period (ACP) + Inventories Conversion Period (ICP) - Average Payable Period (APP),

where OC stands for the time from the beginning of the production process to collection of cash from the sale of the finished product; ACP represents the length of time to collect the receipt of cash from customers; ICP stands for the average age of inventory for which cash remaining is tied up in inventory between purchase and sale. Following Brealey, Myers, and Marcus (2001), Inventory Period (IP) is the time between purchase of raw material, production of the item, and the sale of the item and it is calculated as inventory divided by costs of items sold divided by 365-the number of days in a year; Account Receivable Period (ARP) is the time between sales of the final product on credit and cash receipts for the accounts receivable, and it is mathematically expressed as Account Receivable (AR) divided by sales Multiplied by 365 (the number of days in a year) with Account Payable Period (APP) representing the time between purchase of raw materials on credit and cash payments for the resulting accounts payable. APP is calculated as accounts payable divided by costs of items sold multiplied by 365 (the number of days in a year). These are expressed below.

$$ARP = \frac{Accounts\ Receivable}{Sales} * 365$$

$$APP = \frac{Accounts\ Payable}{Cost\ of\ Goods\ Sold} * 365$$

Generally, owner-managers tend to create a positive value for the business stakeholders by handling the adequate CCC and keeping each different component to an optimal level (Gitman, 2009). Prior empirical studies summarised the relationship between performance, measured via Gross Operating Profit (GOP), and the CCC and found a mixed outcome, claiming that there is a strong negative relationship between firm performance, measured via gross operating profit (GOP), and the CCC (Afza & Nazir, 2007; Deloof, 2003; Dong & Su, 2010; Sharma, 2011). CCC has been the main dynamic traditional measure adopted by previous studies (Baños-Caballero, García-Teruel, & Martínez-Solano, 2010; Deloof, 2003; Juan García-Teruel & Martínez-Solano, 2007; Soenen, 1993) to measure WCM of a firm. It is broken down into three components of inventory management: accounts receivable management, and accounts payable management.

To better understand the linkage between WCM and firm performance, Afrifa (2013) suggests that CCC be broken down into the individual components as the various components of WCM affect firm performance differently. Soenen (1993), in his study, found that the length of CCC influences a firm's performance because a longer CCC tends to stimulate sales (Baños-Caballero et al., 2010; Braeley, 2002), to avert production interruptions, to develop clients into loyal clients (Ng, Smith, & Smith, 1999), influence the acquisition of merchandise at times of low demand (Emery, 1984), to allow clients time to pay (Deloof & Jegers, 1996), to reduce the information asymmetry between buyer and seller (Smith, 1987), to help customers differentiate between products (Deloof & Jegers, 1996), can be used as an effective price cut (Petersen & Rajan, 1997), and to strengthen long-term supplier/client relationships (Wilner, 2000). Richards & Laughlin (1980), have suggested that a CCC analysis should be used to supplement the traditional but static liquidity ratio analysis should be used in order to gain dynamic insights into the

relationship between WCM and firm performance. Similar to the inventory, a low number of days is desirable to keep the CCC short (Lantz, 2008).

2.2.3.2 Accounts Receivables (AR)

Accounts Receivables (AR) depicts assets which represent amounts owed to the firm due to the sale of items to clients in the ordinary course of business (Ross et al., 2008). Accounts Receivables Management (ARM) involves the complete management of the credit and collection system of the items sold by the business. The ultimate aim of ARM is to ensure that debts are collected within specified credit terms (Cheng & Pike, 2003) to reduce the total credit that is written off as bad debt (Adu, 2013; Jackling, Raar, Wigg, Williams, & Wines, 2004; Peacock, Martin, Burrow, Petty, & Koewn, 2003). Generally, AR is expected to be collected within thirty (30) to sixty (60) days because they are the most significant type of claims held by a firm.

Evidently, an increase in AR as a component of both Working Capital Management (WCM) and Trade Credit (TC) tends to boost sales by allowing clients time to pay (Deloof & Jegers, 1996), thereby reducing the information asymmetry between the buyer and the seller, and serving as an inexpensive source of credit for clients (Deloof, 2003; Petersen & Rajan, 1997). The average number of days that a firm uses to collect payments from its clients signifies the AR policy of a firm. A measure of AR policy is obtained by dividing the sum of the opening and ending balance of ARs by two and dividing this by the net sales and then multiplying the outcome with the average number of days in a year (Baveld & Baveld, 2012; Gill, Biger, Gill, Biger, & Mathur, 2010). According to Van Horne (2002), credit standards are required to ensure effective ARM. Credit standards are often applied by firms to strengthen their collection procedures, offering

cash discount and trade credit and using receivables factoring (Boisjoly, 2009; Hill, Kelly, & Venkiteshwaran, 2015).

According to Hampton & Wagner (1989), the three factors that firms should analyse in establishing ARM policy should include assessment of profits, growth in sales, and probable problems likely to accompany increase sales and profit. Generally, the longer the production process, the more cash the firm must keep tied up in inventories, the longer it takes for clients to settle their bills, and, thus, the higher the value of AR. Additionally, if a firm delays paying for its own inputs, it tends to reduce the amount of cash it needs to manage its WC. Deloof (2003) found a significant negative relation between the AR and firm performance which was captured as gross operating income. Boisjoly (2009) provided the evidence that firms should focus on improving their ARM practices in order to remain profitable.

2.2.3.3 Accounts Payables (AP)

Accounts Payables (AP) allow firms to have immediate access to inputs at defer payment and this forms the major source of unsecured short-term financing for many firms (Watson & Head, 2010). AP emanate from transactions in which merchandise is bought but no formal note is signed to show the buyer's ability to the seller because the buyer agrees to pay the supplier the amount required in accordance with credit terms as stated on the supplier's invoice (Gitman, 2005). AP signifies current liabilities due for payment within a year or less on the balance sheet. Accounts Payable Management (APM) is the opposite (side of the coin) of ARM to ensure that suppliers have constant supplies of inventories (Kung'u, 2017). Inefficient APM tends to result in lost cash discounts and reduced trust by the suppliers (Aveline, Deepika, & Ramesh Kumar, 2014; Knauer & Wöhrmann, 2013; Kung'u, 2017).

Other best practices to ensure efficient Arbitrage Pricing Model (APM) include taking advantage of all early-payment discount presented by suppliers; putting in feasible strategies to reduce the number of priority checks; occasionally asking for detailed statements from suppliers; making payments strictly according to planned payment terms negotiated with suppliers to sustain good relations with them and payment stretching especially in times where firms go through temporary cash crunch (Hadriche, 2015; Maness & Zietlow, 2005).

2.2.3.4 Inventory

Ross et al., (2008) state that inventory consists of raw materials to be used in production, Work In Progress (WIP), and finished goods and thus, has effects on both the balance sheet and the income statement of firms (Arnold, Mattoo, & Narciso, 2008; Gitman, 2009). However, manufacturing and distribution firms, which form the focus of this study, tend to have five (5) different inventories in the form of raw materials, Work in Progress (WIP) materials, finished goods, extra material, and consumption materials Lantz (2008). Inventories constitute a meaningful fraction of the total current assets of a business. Therefore, inventory management remains one of the more challenging tasks for WC managers due to its pivotal role in ensuring effective and efficient WCM (Bendavid, Herer, & Yücesan, 2017; Brealey, Myers and Allen, 2008; Maness & Zietlow, 2005; Shubita, 2013; Van Horne, 2002).

Raw materials encompass goods supplied and delivered to a buyer's warehouse to be taken to the production area for the conversion process (Cinnamon, Helweg-Larsen, & Cinnamon, 2010). Minimising raw materials is ideal for efficient WCM (Arsham, 2006; Maness & Zietlow, 2005). Work in progress (WIP) denotes the product which has left the raw material storage area, until it is declared for sale and delivery to clients. WIP must be carefully examined via Quality Control

(QC) procedures to justify how long it takes for products to be cleared for sale (Adu, 2013; Birt et al., 2011; Cinnamon et al., 2010; Clodfelter, 2003; Wild, 2002). Finished goods stand for stock sitting in the warehouse waiting for sale and delivery to clients. Sales and operations planning tend to reduce or eliminate the need for finished goods stock (Marfo-Yiadom, Asante, & Darkwah, 2008; Reid & Sanders, 2007; Van Horne & Wachowicz, 2008). The three fundamental and interrelated aspects in an inventory management include forecasting future demand, deciding when and how much to re-order and deciding where stocks should be held. Some researchers who have affirmed the impact of inventory management on WCM and firm performance include Raman & Kim (2002) and Yang, Ronald, and Chu (2005).

2.2.4 Drivers of Firm Performance

Based on the theoretical foundations of firm performance, it is evident that drivers of firm performance hinge on the industry sector, region, and type of enterprise in which an entity is found and operates (Kasekende, 2001; Schiffer & Wader, 2001; Steel & Webster, 2001). Drivers of firm performance can be grouped into the broad categories of internal and external factors (Almus & Nerlinger, 1999). While internal drivers of firm performance capture all variables that mainly get influenced by the decisions and policy objectives of shareholders and/or managers of a firm, external determinants of firm performance collectively describe the macroeconomic and legal environments within which firms operate. Internal factors tend to mainly focus on financial measures of firm performance while external determinants capture economies of scale due to growth and expansion (Frei, Kalakota, Leone, & Marx, 1999; Santomero, 1997; Singh & Zollo, 1999); technological innovations (Berndt & Griliches, 1990; Löfsten, 2014; Pakes & Griliches,

1980; Soteriou & Zenios, 1999); product and client mixes (Roth & van der Velde, 1991) and geographical location of firms (Leibenstein, 1980; Nocco & Stulz, 2006).

Specifically, internal drivers of firm performance include strategy that to Boyd (1991) and Capon, Farley, and Hulbert (1994), affect how firms adjust in a dynamic, fast-paced, and competitive environment in their quest to enhance their performance. Strategy, as a driver of firm performance, depends on many factors, which include the following:

- **Product Mix**

Firms rely on product mixes not only as strategies to offer innovative and differentiated products to clients but also as strategic decisions to manage their exposure to risks in their bid to enhance their performance over time (Harker, & Zenios, 2000). In general, market realities of infrastructural bottlenecks tend to determine the product mix and, thus, firm performance in all markets. Also, unreliable energy sources, access to business information, and human resources have all been cited as major factors which determine firm performance, mostly in developing economies (Kamunge, Njeru, & Tirimba, 2014; Oshikoya & Hussain, 2007).

- **Client Mix**

Firms achieve client mix by matching targeted client segments with well-priced items. Client mix re-echoes relevant networks as a major driver of firm performance. Generally, inability to attract, delight, and retain clients and/or maintain networks makes it difficult for firms with limited geographical spread to enhance their performance in the midst of competition, especially in developing economies (Holtz-Eakin, Joulfaian, & Rosen, 1994; Hurst & Lusardi, 2004).

- **Geographical Location**

Regulatory restrictions and the choice of product and client mixes collectively determine geographical scope of all firms. Undoubtedly, the geographical location of a firm impacts on its strategic risk-management, which ultimately reduces cost and, thus, performance. Specifically, the jurisdiction of a firm determines the size and severity of operational currency exchange; loan loss and political risks that are likely to impact on its performance over time in all economies the world over (Hoogstra & van Dijk, 2004).

- **Distribution Channels**

As firms offer differentiated products to segmented clients spread across varying geographical locations, the choice for a suitable distribution channel(s) becomes a crucial lynch-pin for firm performance. Likewise, mergers and acquisitions help firms to grow organically (Ijiri & Simon, 1977; Penrose, 1952, 1955; Scherer, 1970). Offering and using alternative distribution channels are not only marketing media but are also means for cost containment that directly affect firm performance. Studies that affirm the importance of distribution channels for firm performance include Lipsey & Chrystal (1999).

- **Technological Innovations**

Technological innovations have also helped radically and rapidly to change the moving and storage of money and the distribution of firm products. More complex software applications have permitted more integrated automation and have offered a competitive edge to proactive firms in all sectors of an economy. The reality is that in the current globalised world, it is possible for new entrants in any industry with better equipped state-of-the-art technology to outperform even

giants in an industry that operate with obsolete technology. Thus, reliance on technological innovations cannot be overlooked as a key driver of firm performance (Oshikoya & Hussain, 2007).

2.2.5 Measures of Firm Performance

Measuring performance seems to be the never-ending story of managers, consultants, and academics. Meyer (2005) hints that firm performance is fundamentally different from other kinds of performance because it is neither observable nor measurable. In both business research and firm performance literature, measurement is often based on scaling and comparative statements about the complex quality of organisational existence rather than particular attributes which could be defined exhaustively (Kaplan & Norton, 2006; Manzoni, 2002; Riahi-Belkaoui, 2004a, 2004b). From both microeconomic and macroeconomic perspectives, firm performance has generally been measured by financial, economic and market-based measures of performance.

- **Financial Measures of Firm Performance**

From the traditional financial perspective, firm performance has been proxied by profitability that stands for a firm's ability to generate adequate return on invested capital (Wild, Larson, & Chiappetta,2007). Using financial measures to capture firm performance means that firms are interested in using their assets efficiently to produce profits and positive cash flows. Financial measures are judged by assessing earnings relative to the level and sources of financing as well as solvency of the firm. The key measures of profitability have been Return On Assets (ROA), gross operating income Deloof (2003), Return On Equity (ROE), Net Operating Profit (NOP;

(Deloof, 2003; Raheman & Nasr, 2007), and Net Interest Margin (NIM) (Ahmed, 2003; Goudreau & Whitehead, 1989; Narware, 2002; Ogunleye, 1995; Padachi, 2006).

Although NOP gives an idea about firm performance, it fails to account for business size and thus, makes it difficult to compare the performance of one firm relative to others. A basic measure of firm performance that corrects for the size of the business is the ROA that primarily captures how well a firm's assets are used to generate profits over time (Atkinson, Kaplan, & Young, 2004; Boute, Lambrecht, Lambrechts, & Sterckx, 2007; Punnose, 2008). Lucius, Habte-Giorgis, and Lee (2008); Raza, Farooq, and Khan (2011); and Sahari, Tinggi, and Kadri (2012) used ROA to measure profitability of a firm. Appraisal of financial measures of firm performance by scholars like Dybvig and Warachka (2010) suggests that such indicators, like ROA and ROE, are not good measures of firm performance on the grounds that generally, any capital–adjusted performance metric is an ambiguous measure of firm performance.

Additionally, the traditional measures of firm performance have been found to be risk-insensitive and unable to reflect the sustainable development of a firm in the long-run. Hence, limitations of the traditional measures of firm performance have made other scholars to suggest capturing firm performance via measures that account for the quality of assets, client satisfaction, the funding capacity, and the risk associated with the production of value of firms as suggested by both the economic and market-based measures of firm performance (Epstein & Manzoni, 1997; Gosselin, 2005; Ittner & Larcker, 2003; Marr, 2006).

- **Market-Based Measures of Firm Performance**

Market-Based Measures are developed on the premise that a good firm performance measure must incorporate more forward-looking indicators and be less prone to manipulation from the markets (Akintoye, 2008; Ittner & Larcker, 2003). Such measures of firm performance signify

the way the capital markets value the activities of any entity and thus, compare these estimates to estimated accounting or economic values. Some commonly used market-based firm performance measures include profit before tax, profit after tax (Akinola, 2012), earnings per share (Carter, Kale, & Grimm, 2000), total share return, return on total assets Deloof (2003), operating profit margin (Korankye & Adarquah, 2013), price-to-book value, credit default swap, Tobin's Q ratio, and cumulative abnormal return (Chung & Pruitt 1994).

The shortcomings of market-based firm performance indicators are traced to the fact that they mirror other indicators already captured in a firm's valuation. For instance, Tobin's Q as a firm performance indicator is premised on several reasons like its dominance as a firm performance measure (Dybvig & Warachka, 2010; Lang & Stulz, 1994; Tahir & Razali, 2011). Also, unlike other firm performance measures, Tobin's Q does not require risk-adjustment or normalisation and is also relatively free from managerial manipulation (Lindberg & Ross, 1981). However, like all firm performance indicators, the use of Tobin's Q as a measure of firm performance has been seriously contested by scholars like Dybvig & Warachka (2010). They argued that due to the endogeneity of Tobin's Q arising from its ambiguous nature, Tobin's Q decreases with an increase in a firm's value.

Finally, appraisal of measures of firm performance suggests that a researcher's choice for one measure of firm performance over the other(s), depends on the availability and quality of data, extent of required data analysis in relation to one's familiarity with statistical tools, research problem, and the research design adopted under a given study.

2.3 Empirical Review

2.3.1 Studies that found a positive relationship between Working Capital and Performance

Gill, Biger, Mathur, Palmer (2010) studied the relationship between WCM and firm performance in the United States of America (USA) and found a positive relation between CCC and a firm's financial performance. Additionally, they revealed a statistically significant negative linkage between Accounts Receivables and firm performance, suggesting that firms tend to enhance their performance by keeping their WC to the minimum. The researchers backed their stance by asserting that poorly performed firms strive to decrease Accounts Receivables in their bid to reduce their cash gap in the CCC. In a related study, with the help of correlation and regression analysis, Tingbani (2015) found the link between AP and profitability as statistically significantly positive for UK firms listed on the London Stock Exchange for the period 2001-2011. The evidence suggests that through early payments of credit, firms are able to enhance their profitability through reduced transactional cost (Ferris 1981; Emery, 1987), enhanced discount for early payment (Brennan et al., 1988; Nazir & Afza, 2009; Petersen & Rajan, 1997a; Schwartz & Whitcomb, 1979), and reduced information asymmetry between buyers and sellers (Komminoth & Long, 1993; Pike, Cheng, Cravens, & Lamminmaki, 2005; Smith, 1987) .

Nyabwanga, Ojera, Lumumba, Odondo, and Otieno (2012) assessed the effect of WCM practices on the financial performance of one-hundred and thirteen (113) firms in the Kisi district of Kenya via Pearson's correlation coefficients and multiple regression analysis. Findings from this study established a positive statistically significant relation between WCM practices and firm performance for the study period. This study, however, evidently failed to consider large and medium enterprises and firms in other sectors. In a related study, (Baños-Caballero, García-Teruel, & Martínez-Solano, 2013) backed the assertion that when firms relax their credit period,

their storage costs of excess inventories tend to reduce and thus, help to enhance their financial performance. Studies such as (Gill, Biger, Mathur, et al., 2010; Raheman, Afza, Qayyum, & Bodla, 2010; Sharma & Kumar, 2011) have also found a positive association between WCM and profitability. Pratap Singh & Kumar (2014), in a study captioned WCM in a literature review and research agenda, and identified gaps in the current body of knowledge to justify future research directions in WCM. Findings from this study revealed that WCM has attracted serious research attention in the recent past after the financial crisis of 2008.

Also, detailed content analysis of Gill et al, (2010) found that most of the research work is empirical and focusses mainly on the two aspects of impact of WC on profitability of a firm and the working capital practices. Again, Pratap et al, (2014) research concluded that WCM is essential for corporate profitability. However, it identified paucity of survey-based approach and lack of systematic theory development study and the need for future research to explore the linkage between WCM and firm performance via these approaches.

Scherr (1989) established that by implementing best practices in WC, firms can strengthen strong cash flow levels, improve profitability, budgeting and forecasting process, predictability and manageability of results, heighten risk visibility, reduce reaction time, and thus, enhance overall performance. Ogundipe and Ogundipe (2012) showed that a well designed and implemented WCM contributed positively to the creation of firm's value in Nigeria. Ghosh and Maji (2003) confirmed that efficiency in WCM tends to reduce operational embarrassments due to its associated improved efficiencies and profitability as revealed in the Indian cement firms during the 1992-1993 periods to the 2001-2002 periods.

Also, Eljelly (2004) found in his study of nine-hundred and twenty-nine (929) firms in Saudi Arabia that the magnitude of WC components has a significant direct effect on firm performance at the industry level. Furthermore, Blinder and Maccini (1991) established that a positive relation exists between WCM and firm's performance due to the fact that an additional investment in inventories or AR is often linked to greater sales as proxy for firm performance. Again, (Blinder & Maccini, 1991; Schiff & Lieber, 1974) backed their stance by affirming that larger inventories tend to prevent interruptions in the production process. Also, larger inventories results in loss of business due to scarcity of products and can also reduce supply costs and price fluctuations and improve on client service and, thus, tend to positively influence firm performance.

Interestingly, researchers like (Brennan et al., 1988; Deloof & Jegers, 1996; Komminoth & Long, 1993; Lee & Stowe, 1993; Petersen & Rajan, 1997; Smith, 1987) have all confirmed that high investments in working capital tend to enhance a firm's performance. Specifically, Komminoth & Long (1993); Lee & Stowe, (1993); Smith, (1987) hint that granting Trade Credit (TC) tends to stimulate sales and, hence, firm performance by reducing asymmetric information between buyers and sellers.

Also, (Deloof & Jegers, 1996; Shipley & Davis, 1991) justified the positive link between WCM and firm performance on the basis of how effective WCM is used as an effective price cut, whereas (Brennan et al., 1988; Petersen & Rajan, 1997) confirmed that WCM has positive effect on firm performance due to the ability to encourage clients to acquire merchandise at times of low demand (Emery, 1987). Moreover, Ferris (1981) and Emery (1987) iterate that the ability of effective WCM to reduce transaction costs and strengthen long-term supplier-customer relationships offers enough grounds to establish a direct link between WCM and firm performance (Fisman & Love, 2001; Ng et al., 1999; Wilner, 2000).

2.3.2 Studies that found a negative association between WCM and Firm Performance.

Previous studies which focussed mainly on large firms have affirmed a negative link between WCM and firm performance (Deloof, 2003; Juan García-Teruel & Martínez-Solano, 2007; Shin & Soenen, 1998a; Uyar, 2009; Wang, 2002). Prior empirical studies that have also established a strong negative relationship between firm performance, measured through Gross Operating Profit (GOP) and WCM proxy as CCC, include (Afza & Nazir, 2007; Dong & Su, 2010; Sharma, 2011) . The observed link between WCM and firm performance means having a WCM policy is required for a low as possible AR and inventories and the highest amount of AP to be attained in order to enhance firm performance.

Furthermore, Alipour (2011) delved into the relationship between WCM and corporate profitability with data solicited from one-thousand and sixty-three (1,063) listed firms on the Tehran stock exchange via multiple regressions and Pearson's correlation analysis. The results show a significant inverse relationship between WCM and firm profitability for the period of the study. Again, (Deloof, 2003; García-Teruel & Martínez-Solano, 2007; Shin & Soenen, 1998; Wang, 2002) , and Jose, Lancaster, and Stevens (1996) who also analysed a linear relationship between WCM and firm performance suggested that firms can enhance their performance by reducing their WC levels. However, in arriving at this conclusion, these scholars evidently ignored the risk of loss of sales and interruptions in the production process related to low levels of WC that could have been captured with a non-linear relation rather than the linear relationship that was assumed.

Tingbani, (2015) explored the linkage between WCM and profitability of two-hundred and twenty-five (225) UK listed firms on the London Stock Exchange for the period 2001-2011via the Contingency Theory approach. With the help of correlation and regression analysis, findings

from the study indicated a significantly negative relationship between WCM and firm performance. This finding lends credence to findings by some previous studies (Baños-Caballero, García-Teruel, & Martínez-Solano, 2013; Deloof, 2003) that by minimising investment in WC, firms could enhance firm performance due to the lower cost of financing and less reliance on external finance (Baños-Caballero, García-Teruel, & Martínez-Solano, (2013), reduced administrative costs, and less debt defaults Cheng & Pike, (2003).

Baños-Caballero et al., (2013) studies also found a significantly inverse relationship between AR and firm performance. This evidence is consistent with studies of Deloof (2003); Juan García-Teruel & Martínez-Solano (2007); Lazaridis & Tryfonidis (2006); Padachi (2006) that a lower AR period enhances firms' performance because it frees up cash, which could have been tied up to enjoy early payment discounts that help to avoid the costly need of borrowing to fund investment in clients. Though Baños-caballero, García-teruel, & Martínez-solano, (2011), like Tong & Peng (2008), used a quadratic relation in examining the linkage between WCM and firm performance, they found out that CCC and leverage are negatively correlated with firm performance, keeping in line with (Deloof, 2003; Juan García-Teruel & Martínez-Solano, 2007) who assumed a linear relationship in their estimations. Results of these studies accepted the position that CCC may be too long and that shortening it might enhance firm performance.

2.3.3 Studies that found either no relationship or mixed relationship between WCM and Firm Performance.

Sarkar and Goswami (2011) assessed the impact of Total Cost Management (TCM) on firm performance in India for the period 2000-2001 to 2009-2010 and found out that all selected ratios relating to TCM have no significant association with firm performance for the period

under study. Gul, Khan, Rehman, and Khan (2013) studied the effect WCM has on firm performance of Small and Medium Enterprises (SMEs) in Pakistan for the period spanning 2006 to 2012. This study revealed no significant relationship between WCM and firm performance. However, findings from this study must be applied with caution due to the fact that the researchers excluded large firms in their sample in the area of study.

Almazari (2013) investigated the relationship between the WCM and the firms' profitability of eight (8) Saudi cement manufacturing firms listed on the Saudi Stock Exchange for the period 2008-2012. With the aid of the Pearson Bivariate correlation and regression analysis, the findings of the study showed that an industry's current ratio was the most critical liquidity measure with effect on profitability. It was also found that both the size of a firm and WCM has a high degree of association with firm performance. Gul, Khan, Rehman, and Khan (2013) studied the effect of WCM on performance of SMEs in Pakistan for the period 2006 to 2012 via secondary data sourced from the Small and Medium Enterprises Development Authority (SMEDA), the Karachi Stock Exchange, tax offices, the companies themselves, and Bloomberg Businessweek. Using Return on Assets (ROA) as a proxy for firm performance, the study established that Account Payable Period (APP), growth and size have positive association with firm performance whereas Account Collection Period (ACP), Inventory (INV), Cash Collection Period (CCC) and DR have inverse relation with firm performance. Sarkar and Goswami (2011) used quantitative methods of correlation and regression analysis to study the relationship between Total Cost Management (TCM) and firm performance for Indian firms for the period of 2000-2001 to 2009-2010 and found that the impact of TCM on financial performance reflects both positive and negative associations for the selected firms during the period under study. Cote and Latham (1999) confirmed that the management of components of WC (i.e. receivables,

inventory and accounts payable) tend to impact on cash flows, which in turn affect firm performance. The researchers, however, hinted that each of the Working Capital (WC) items impact firm performance differently. The study conducted by Akinlo (2011) in Nigeria showed that Cash Collection Cycle (CCC), Account Receivables (AR), and Inventory Period (IP) affect firm performance positively, while AP inversely affect firm performance for the period under study.

Gakure, Cheluget, Onyango, and Keraro (2012) examined the link between WCM and performance of fifteen (15) listed manufacturing firms at the Nairobi Stock Exchange (NSE) from 2006 to 2010. Using Pearson's correlation and regression analysis, the study found mixed results on the relationship between components of WC and firm performance within the study period. Gakure et al., (2012) studies is limited by focussing only on the few listed manufacturing firms in the NSE. Other studies consistent with the trade-off between firm performance and Risk Hypothesis as espoused in rationale for WCM include (Jose et al., 1996; Wang, 2002). The results of these studies suggest that firms can increase their performance by reducing their WCM, but the extent to which each component of WC impact on firm performance remains an empirical issue. Jayarathne (2014) attempted to assess the effect of WCM on profitability using a five-year dataset on twenty (20) manufacturing firms listed on the China Stock Exchange. The study found a significantly negative relationship between accounts collection days and profitability, a significantly positive association between inventory conversion period and profitability and a significantly positive relationship between average payment days and profitability. The findings of Jose et al., (1996) studies therefore confirm the traditional view of efficient WCM and its effects on profitability.

2.3.4 Studies that found a non-linear relationship between WCM and Firm Performance.

Evidence abounds that many researchers have ignored the fact that the higher risk of loss of sales and interruptions in the production process that is related to low levels of WC could mean that the relationship between WCM and firm performance is, after all, not linear, as reduction in WC at certain levels may negatively affect a firm's performance. The implication of this is that the relation between WCM and firm performance may consequently be concave rather than linear and might be better captured by a quadratic relationship.(Baños-caballero et al., 2011), unlike previous studies that examined the link between WCM and firm performance by controlling the unobservable heterogeneity and possible endogeneity, and found that there is a concave relationship between WC level and firm performance indicating that firms have an optimal WC level that maximises their financial performance. This finding was consistent with what was established by Tong & Peng (2008), that there is an inverted U-shaped relationship between WC and firm performance, which in turn indicates that both high and low WC levels are associated with decrease in firm performance. Fahim, Kaviani, and Fashtali (2015) conducted a study on the relationship between WCM and profitability of ninety (90) listed firms on the Tehran Stock Exchange for the period 2008 to 2012. Using a quadratic model, the results of the study did not confirm a significant inverse U-Shaped relationship between CCC and Net Working Capital to Total Asset (NWC/TOA) as indicators of WC and ROA proxy for firm performance. However, the study confirmed a significant inverse U-Shaped relation between current ratio and quick ratio and firm profitability as a proxy for firm performance.

- **Studies on Developed Countries**.

Mohamad and Noriza, (2010) relied on secondary data from Bloomberg's seventy-two (72) listed firms for the period 2003-2007 to examine the linkage between WCM and firm performance in Malaysia. With the help of correlation and multiple linear regressions, the study's results showed a significant negative relation between WCM and firm performance for the study period. Deloof, (2003) pioneered a study on the relationship between WCM and firm profitability with a sample of one-thousand, six-hundred and thirty seven (1,637) Belgian firms via correlations and regression analysis and found out that the number of days of accounts receivable, inventory, and accounts payable correlated negatively with firm performance. Gill, Biger, Mathur, et al., (2010) examined the association between WCM and the performance of eighty-eight (88) American firms listed on the New York Stock Exchange (NYSE) for the period 2005 to 2007. The study established a statistically significant inverse relationship between WCM and firm performance for the study period. Though this study covered firms listed on the New York Stock Exchange (NYSE) in 2007, it only explored the problem through the quantitative research lens and also failed to account for unlisted firms in its coverage.

Shin & Soenen, (1998) studied the relation between WCM and firm performance of listed American firms for the periods 1975-1994. The study established a strong negative association between WC and firm performance for shareholder value creation. This result indicates that managers can create value for their shareholders by managing their WCM to a reasonable minimum. Furthermore, the result of the study is an affirmation that the reduction in a firm's net trade cycle tends to reduce operational expenditure and create value for shareholders. García-Teruel & Martínez-Solano, (2007) estimated the effects of WCM practices on the profitability of a sample of Spanish Small and Medium Enterprises (SMEs) in the Supermarket sector between

the periods 1996 to 2002. Specifically, this study established that a significant negative relation between the number of days of accounts receivable and days of inventory and firm profitability. Also, the researchers asserted that firms can enhance their corporate performance by reducing their CCC to a minimum, as far as that is reasonable. The results of García-Teruel & Martínez-Solano, (2007) were similar to those found in previous studies that focused on large firms (Deloof, 2003; Jose et al., 1996; Shin & Soenen, 1998; Wang, 2002) .

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter discusses key aspects of the methodology that was used for the study. The chapter explains the design of the study in the second section of this chapter, and the paradigm that underpins the study in the third section. Both the research design and the paradigm that underpins the study are meant to explain the philosophical underpinnings of the study. In section four of this chapter, the Fixed Effects (FE) and the Random Effects (RE) techniques are discussed in detail, together with the Hausman test which was used to select one of the two techniques. Section four also explains the merits of each of the two techniques as well as their weaknesses and the circumstances under which one may be preferred over the other. The Hausman test presents a scientific approach to determine between the two techniques in each sample. The models that were estimated for the study are stated in section four. Information about the data, the sources of the data and the sample selection are discussed in section five of this chapter and the variables included in the study are discussed briefly in section six.

3.2 Research Design

The purpose of this study was to establish the relationship between Working Capital Management and profitability of GSE listed firms. The study examined this relationship further by comparing firms with majority local ownership with their counterparts that had majority foreign ownership. The setting of the study is experimental and quantitative analytical methods were used. The study uses secondary data on firms and macroeconomic data for the analysis.

3.3. Method of Analysis

This section presents a discussion on the methods of analysis that were employed for this study. The section first discusses two Generalised Least Square techniques, and a case is made for the selection of one of the two. The section also presents the econometric specification that was adopted for the study.

3.3.1 Estimation Techniques

The study uses data on a panel of firms and therefore, the panel data methodology was adopted for the study. Two panel data techniques were considered following usage by previous authors such as (Bellouma, 2011; Garg & Gumbochuma, 2015; Manzoor, 2013; Nazir & Afza, 2009; Ribeiro, Almeida, & Jr, 2014). These techniques are the Random Effects (RE) technique and the Fixed Effects (FE) technique. The Ordinary Least Square (OLS) technique was not used because it is not appropriate for panel data since it does not capture the panel characteristics of the data. Moreover, with panel data, OLS does not give the most efficient estimators (Cumby & Huizinga, 1992; Greene, 2003; Schmidheiny, 2015).

The Random Effects technique is a form of the Generalized Least Square Estimating techniques. This technique is also known as the mixed or multilevel technique (Clark, Crawford, Steele, & Vignoles, 2010). A key assumption of the Random Effects technique is that latent variables are uncorrelated with the observed variables. In the presence of this assumption, the RE is known to be more efficient than the Fixed Effect (FE) technique. For instance, in the context of this study, this will imply that variables like the intelligence of the CEO, which are unobservable, will be assumed to be uncorrelated with observable variables such as the size of the current assets. This assumption limits the size of the variance, hence, making the estimates more efficient. This is

done in part by combining information across units (Gelman & Hill, 2007) which culminates in less variability across samples.

The variance is usually split into two parts: the within variance and the between variance. This reflects the sources of the variation in the total variance, which is within observations in the same sample or between samples. Also, it is likely to produce shrunken residuals and accounts for differential effectiveness. It, however, has a higher chance of producing biased estimates compared to the Fixed Effects technique. This setback is usually resolved by assuming that the covariates of interests are uncorrelated with the unit effects.

The second technique, the Fixed Effect technique, also known as the within estimator, controls for the effects of time invariant effects by using time invariant variables. A key assumption of the Fixed Effect technique is that there are characteristics of each member of the sample that are unique to that member alone. For instance, in the case of cross-country studies, the culture of a country or the president of the country is usually unique to that country. So, in Ghana, it is possible to agree that there are aspects of work etiquettes that are unique to Ghanaians. Thus, the technique accounts for this peculiarity in producing the estimates. It is used to explore the relationship between regressors and the regress and within an entity such as a country. It captures the features that are peculiar to the entity and controls for their impact on the estimates; something which other techniques often ignore. FE controls for all time invariant discrepancies between each observation and is suitable for examining the causes of change within a given entity. It is known to be a consistent estimator. The estimates it produces are deemed to be unbiased because of the omission of time-invariant features. The FE technique controls for both time and entity specific effects and is deemed to have a systematic influence on the data. Another advantage of the FE technique is its ability to solve the omitted variable problem.

The FE technique yields unbiased estimates and is easy to implement. It requires that a set of dummy variables be included as regressors for each member of the sample to capture their unique characteristic. Its main setback, however, is that it is between estimates and could potentially be inefficient, thus, making it highly sample-dependent. It also suffers from lower model power and is not useful for out of sample forecasts (Hausman, 1978).

In any case, it is important to select one of these techniques for estimating the parameters of a variable. The choice of one over the other is determined by implementing Hausman Test suggested by Hausman (1978). The test is useful for determining the nature of the data by considering several factors such as: the extent of variability within the subjects, the nature of the omitted variables and whether the study focusses on the effects of variables whose values do or do not change across time (Baltagi & Liu, 2016; Greene, 2008; Greene, 2003). In the case of Baltagi et al, (2016), the Hausman test suggested that the FE was more suited to the data. This suggests that the data exhibits non-continuity and heterogeneity. The FE is able to control for unobserved heterogeneity when it is correlated with the independent variables and is constant over time. In the working capital and firm performance literature, several authors have previously used the FE technique to study similar relationships (Deloof, 2003; Dong & Su, 2010; Padachi, 2006; Sharma & Kumar, 2011b). Lastly, to determine the veracity of the conclusions arrived at regarding the differences between local and foreign firms, the chow test of parameter stability was implemented.

3.3.2 Model Specification

The present study adopted and modified the model used by Nazir and Afza (2009). The argument of the model is that firm profitability is dependent on Working Capital Management, firm characteristics and macroeconomic variables, specified as follows:

$$\text{Profitability}_{it} = f(\text{WorkingCapitalManagement}_{it}, \text{FirmCharacteristics}_{it}, \text{MacroeconomicVariables}_{t})$$

Equation Specification 1

$$ROA_{it} = \beta_1 + \beta_2 ICP_{it} + \beta_3 FirmSize_{it} + \beta_4 CR_{it} + \beta_5 CA_{it} + \beta_6 SC_{it} + \beta_7 CT_{it} + \beta_8 GDPgr_t + \beta_9 ExcRate_t + \beta_{10} ElecStab_t + \mu_i + v_t + \varepsilon_{it}$$

Equation Specification 2

$$ROA_{it} = \alpha_1 + \alpha_2 RCP_{it} + \alpha_3 FirmSize_{it} + \alpha_4 CR_{it} + \alpha_5 CA_{it} + \alpha_6 SC_{it} + \alpha_7 CT_{it} + \alpha_8 GDPgr_t + \alpha_9 ExcRate_t + \alpha_{10} ElecStab_t + \rho_i + \tau_t + \epsilon_{it}$$

Equation Specification 3

$$ROA_{it} = \delta_1 + \delta_2 APP_{it} + \delta_3 FirmSize_{it} + \delta_4 CR_{it} + \delta_5 CA_{it} + \delta_6 SC_{it} + \delta_7 CT_{it} + \delta_8 GDPgr_t + \delta_9 ExcRate_t + \delta_{10} ElecStab_t + \varphi_i + \omega_t + \gamma_{it}$$

Equation Specification 4

$$ROA_{it} = \propto_1 + \propto_2 CCC_{it} + \propto_3 FirmSize_{it} + \propto_4 CR_{it} + \propto_5 CA_{it} + \propto_6 SC_{it} + \propto_7 CT_{it} + \propto_8 GDPgr_t + \propto_9 ExcRate_t + \propto_{10} ElecStab_t + \forall_i + \pi_t + \in_{it}$$

Where the subscript *i* is the firm index, *t* is the time index and $\mu_i, \nu_t, \varepsilon_{it}, \rho_i, \tau_t, \epsilon_{it}, \varphi_i, \omega_t, \gamma_{it},$

$\forall_i, \pi_t \; and \; \in_{it}$ are the error terms. The terms α, β, δ and ∝ are the parameter estimators. Other variables have the same meaning as in table 3.1 below. The study also split the data between the foreign owned and locally owned firms and estimated each of the models separately for both samples.

3.4 Sampling and Sources of Data

Data on the local firms was obtained from the financial department of the companies on the Ghana Stock Exchange database. The data on local firms was obtained from the financial department of companies on the balance sheet showing data at the end of the year. All non-financial firms were considered at first but those who had fewer than five years' data were eventually excluded. A total of eighteen (18) companies were included. These consisted of twelve (12) local and six (6) foreign companies. Macroeconomic data were obtained from the World Bank Development Indicator database. The data spanned the period 2003 to 2016 and were unbalanced due to missing data.

3.5 Variable Description

3.5.1 Dependent Variable- Return on Assets (ROA)

Firm profitability is measured using the annual returns on assets for each firm. This was computed as follows $ROA = \frac{Net\ Profit}{Total\ Assets}$

3.5.2 Independent Variables

Inventory Conversion Period

Inventory Conversion Period refers to the number of days or the time required by a firm to organise raw materials, turn them into consumer products, and selling them to its patrons (Huynh, 2012). The number of days depends upon the production process and strategy being used. Firms must decide between quality production, high-speed production and how much money to be spent to modernise the technology.

Receivable Collection Period

Receivable Collection Period refers to the number of days it takes for firms to collect amounts due them from their debtors (Huynh, 2012). Generally, shorter number of days is considered to be good because it has the potential of cutting the firm's interest on short term financing needs.

Account Payables Period

Account payables period is the time it takes for a firm to settle its debt to its creditors. Long account payables periods are considered to be good for firms at it allows them the opportunities to turn the amount owed around before paying the indebtedness. Account payables period indicate the duration between the purchases of raw material to the point that real cash payment is done to the suppliers. Firms need to take a decision and also consider the implication of damaging the long-term relationship with suppliers if there should be a continual delay of payment.

3.5.3 Control Variables

Firm Size

Firm size can be proxied by taking the natural logarithm of sales (LN) (Deloof, 2003; Huynh Phuong Dong, 2010; Gill, Biger, Mathur, et al., 2010; Padachi, 2006; Sharma, 2011; Trinh, 2003) and for sales growth we have (Deloof 2003., Filipa, Garcia, and Vitorino 2011, Haitham Nobanee 2009, Padachi 2006, Trinh 2003). Padachi (2006) used the natural logarithm as a measure of firm size. Firm size was introduced to the model of Nazir et al (2009) to determine whether possible economies and diseconomies of scale exist among the local versus the foreign manufacturing and distribution firms listed on the Ghana Stock Exchange. The aforementioned researchers found an inconsistent correlation between working capital management and firm size. According to Nazir and Afza (2009), the control variable often used is the ratio of current liabilities to total assets.

GDP Growth

Gross Domestic Product (GDP) is the market value of all goods and services newly produced within a specified period of time, within the geographical boundaries of a country. This variable is included in a study to control for the size of economic activity in the country at a given time. This is important because firms generally generate higher revenues when the economy is growing, hence their profitability is expected to be higher (Çelik, Bilen, & Bilen, 2016; Scholeova, 2012).

Electricity Stability

The stability of electricity is important for day to day manufacturing and distribution firms to some significant extent, and to some significant extent of the services sector. In Ghana, on the other hand, there has been unstable electricity supply over the years. The production and supply of electricity to locally based firms have not, over the years, been as required. This variable is measured using the percentage of the electricity produced in a year from hydro sources.

Exchange Rate

The study controlled for the effect of exchange rates on firm profitability. In Ghana, many firms have foreign currency denominated assets and liabilities, which means that they need to manage foreign exchange risks as part of the overall Working Capital Management strategy (Çelik, Bilen, & Bilen, 2016; Warsop, 2009). Moreover, foreign firms are expected to be particular about the effect of foreign exchange movement. The study measured exchange rate using the official GHS/USD exchange rate.

Table 3.1 below shows the variables used for the study and their measurement as well as the expected signs.

Table 3. 1 Variable Description

Variable	**Formula/ Measurement**	**Expected sign**
Return on Asset (ROA)	$\frac{\text{Net Profit}}{\text{Total Asset}}$	
Receivables Collection Period (RCP)	$\frac{\text{Account Receivable}}{Sales} * 365$	-/+
Inventory Collection Period (ICP)	$\frac{\text{Inventories}}{\text{Cost of Goods Sold}} * 365$	-/+
Average Payable Period (APP)	$\frac{\text{Account Payables}}{\text{Cost of Goods Sold}} * 365$	-/+
Cash Conversion Cycle (CCC)	ACP + ICP – APP	-/+
Firm Size (Firm_Size)	Natural Logarithm of Sales	+
Current Ratio (CR)	$\frac{\text{Current Asset}}{\text{Current Liabilities}}$	+
Current Asset to Total Asset Ratio (CA)	$\frac{\text{Current Asset}}{\text{Total Asset}}$	-
Stock to Current Asset Ratio (SC)	$\frac{\text{Inventory}}{\text{Current Assets}}$	+
Current Liabilities to Total Assets Ratio (CT)	$\frac{\text{Current Liabilities}}{\text{Total Assets Ratio}}$	+
Exchange Rate (ExcRate)	Local Currency Unit (LCU) per US$	-
GDP Growth (GDPgr)	Annual real GDP growth	+
Electricity Stability (ElecStab)	Electricity production from hydroelectric sources (% of total)	+

CHAPTER FOUR

ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

In this chapter, the results of the study are presented and discussed. The chapter seeks to determine empirically, the answers to the research questions that were formulated in the introductory chapter. Section two of this chapter presents the descriptive statistics to show the nature of the data that was used in the study. Section three presents the correlations between pairs of variables used in the study. The purpose of the correlation analysis is to show the direction of the relationship between the variables used. The relationships are analysed further in section four, using regression techniques on the relationship between Working Capital Management and firm profitability.

4.2 Descriptive Statistics

Full sample statistics are shown in table 4.1 below. The table shows the mean, standard deviation and the minimum and maximum values of each of the variables. The table presents data for eighteen (18) non-financial firms that are listed on the Ghana stock exchange (GSE) over the period from 2003 to 2016. Firm profitability was measured using ROA. The ROA, which is a ratio of the profit to assets, has a mean of 1.73%. This is interpreted to mean that the firms included in the sample generated an average of GHS0.0173 per cedi of an asset for each year over the study period. Upon closer observation of the data, however, it was noted that this mean was skewed by a few firms that had made significant losses over the period, as much as 464%. This is further evidenced by the range of values as shown by the standard deviation and the minimum and maximum values of ROA in table 4.1 below.

Not too surprising, the sizes of companies in the sample vary considerably. It can be seen from the average (mean) and the dispersion of total assets. This can be interpreted as a result of the differences in the types of activities that the companies are engaged in and the scope and scale of these activities. The cedi-value of total assets can affect the efficiency of regression estimates if used. To remedy this, the variable was log-transformed. The log-transformed variable has a smaller standard deviation in terms of absolute value, as shown in the table below. At the same time, other indicators of the size of the company, such as sales values and stock size, showed similar characteristics, as previously observed with the total assets. However, this does not indicate that the firm size was a determining factor for performance.

Table 4. 1 Descriptive statistics for the full sample

Variable	Obs.	Mean	Std. Dev.	Min	Max
ROA	184	.0172571	.3654852	-4.640182	.3273673
CCC	180	59.16132	151.6161	-435.622	1040.045
RCP	181	62.79638	88.17955	0	1065.606
ICP	180	121.2525	114.9426	0	670.4166
APP	180	124.4687	108.6925	1.38106	588.6446
FirmSize	181	17.10472	2.261794	12.06739	21.3934
CR	184	1.799555	1.795818	.0357543	9.806464
CA	184	.5083201	.2349313	.0472801	1.600729
SC	184	.4404346	.2166484	0	.9395993
CT	184	.4507111	.3589589	.0065176	4.043688
GDPgr	224	6.823588	2.780218	3.576648	14.046
ExhRate	187	1.266155	.3762462	.8667643	1.95405
ElecStab	205	70.19416	8.957208	53.41072	87.44825
ownership	224	.6651786	.472985	0	1

CCC=cash conversion cycle; RCP=receivables conversion period; ICP=inventory conversion period; APP=account payable period; FirmSize=Firm Size; CR=current ratio; CA= ratio of current asset to total asset; SC= ratio of stock to current asset;

CT= ratio of current liabilities to total assets; ExhRate=GHS/ US$; GDPgr= annual real GDP growth; ElecStab=percentage of electricity production from hydroelectric sources; ownership= 0 for foreign firms and 1 for local firms

Source: Research Data, 2018

With regard to the use of trade credit, it can be seen from the coefficients that while some companies relied heavily on trade credit, some other companies had negligible amounts of credit. However, the relative magnitude of the coefficients of RCP and APP shows that the sampled companies used trade-credit at a higher level than their clients. In addition, the sampled companies collected faster account payable (about 63 days) than creditors, which is shown by the mean of account receivable period (about 124 days). Thus, it can be concluded that the companies that have been sampled must have a good level of liquidity. This is good for WCM, except that long-term payment delays may make it less attractive to future creditors. This can be seen by means, standard deviations, and minimum and maximum values of APP and RCP in Table 4.1 above.

The time it takes for companies to convert the material to manufactured goods makes it important to evaluate the effectiveness of their inventory management practices. Companies from which samples are taken take about one-hundred and twenty-two (122) days to convert raw materials into finished goods. This could be a sign that companies are holding too much stock at a time. While it is not clear why this may be so, it is plausible to say that given the seasonal nature of inputs used by many manufacturing firms, they retain a large stock of raw materials so that they can have enough production until the next season. The standard deviation indicates that there is a wide variation in the stock of inventory the firms hold as some may not need to hold any inventory due to the type of industry they operate. It is also plausible to note that the inventory collection period may also be because companies have recorded a slow sales rate during the study period.

In addition, companies included in the study had an average cash conversion cycle of two months. This means that companies had restricted or tied-up their capital in current assets for two months on average. This variable also shows the difference between the company's operating cycle and its payment period. It is clear from the analysis so far that the repayment period is longer for some companies than their own operating cycle. Therefore, these companies should not suffer from liquidity problems, as the data shows.

Consistent with the above, CR shows that the average of current assets of companies is double that of their current liabilities. Thus, it can be said that the liquidity of these companies is good. It is expected that the performance of companies with good liquidity is on average better. However, the ROA discussed above does not give this meaning to the companies that have been sampled, probably because of the high amount of stock held by the companies and the fact that they keep this inventory for a long time. The ratio of current assets to total assets, which measures the extent of companies' investment in working capital shows that companies in the study invested more than half of their assets in WC. Therefore, with these observations, companies are expected to perform better (Afrifa & Padachi, 2016; Akoto, Awunyo-Vitor, & Angmor, 2013; Padachi, 2006). Again, the measure of performance does not confirm this expectation. The causal effect of these variables is subsequently reviewed.

Contrary to this positive view of liquidity, these companies may hold very large stocks, which may indicate risk. This can be seen from the ratio of inventory to current assets showing that companies retain an average of 44% of their current assets in inventory. This means that their quick ratio will be significantly lower. The stock may take longer to convert to cash than other current assets, so this may mean that the overall liquidity may be good and that the conversion rate of current assets to liquidity is slow for the companies sampled. It was found that the

average value of the ratio of liabilities to total assets is about 45%. Hence, it can be said that the level of corporate solvency is satisfactory.

The average growth rate during this period was 6.82%. From economic theory, high economic growth is expected to lead to better corporate performance. The average reported growth rate is very high and seems stable given the standard deviation of 2.78%. The exchange rate ranged between GHS 0.867 and GHS 1.95 against the US dollar for each period.

In modern times, stable electricity is necessary for manufacturing, and to a large extent, the distribution service sector is not exempted. However, for Ghana, it can be said that the electricity supply has not been stable over the past years. The amount of electricity produced and supplied locally was consistently lower than required. The resulting shortfall has often led to the rationing of power throughout the country. In addition, electricity supplies are often cut for maintenance of equipment, some of which are unplanned. In addition, rainfall is a constant cause of power cuts. This leads to a fluctuation in the electricity supply, which adversely affects the manufacturing industry. Companies are trying to improve this by installing their own power plants at high costs, sometimes resulting in a significant reduction in their profits. Also, the price of electricity rose by more than 300% during the period of the study (Gyebi & Quain, 2013). This study measured the stability of electricity using the percentage of electricity produced from hydropower. Hydro has been the main source of electricity in Ghana for more than sixty (60) years. When there is a shortage of hydro-energy production, this is mainly supplemented by thermal energy.These are usually the periods when the voltage is unstable. High value, therefore, indicates stability in electricity supply.

4.3 Analysis of the Correlation

A correlation analysis is a method that seeks to measure the strength of the relationship between two variables. This technique measures the degree and nature of correlation between pairs of variables using numerical coefficients. The form and the nature of the relationship or association, the magnitude, and the direction of the coefficient give us an indication of whether there is a direct or indirect relationship between any pair of variables. A positive coefficient indicates a direct association between the pair of variables, whereas a negative coefficient indicates an inverse association between the pair. A positive association means that the two variables move together, that is, if one variable increases, the other variable also increases and vice versa. However, an inverse relationship means that when one of the variables increases, the other corresponding variable decreases. Correlation coefficients are bounded between -1 to 1. In terms of correlation, the higher the absolute value of the coefficient, the higher the degree of correlation or a stronger correlation between the two variables. Thus, the correlation coefficient of 0.7 is higher than the other coefficient 0.2.

There are several techniques that are available for use in estimating the relationship between two variables. Some of the techniques available are Spearman, Kendell, Point-Biserial, and Pearson. Pearson Product moment is the most commonly used method. The present study employed the Pearson technique. The outcome of the correlation analysis is displayed in Table 4.2 below in a matrix form.

Table 4. 2 Correlation Matrix

	ROA	CCC	RCP	ICP	APP	FirmSize	CR	CA	SC	CT	GDPgr	ExhRate	ElecStab
ROA	1												
CCC	0.0094	1											
RCP	-0.0787	0.5778	1										
ICP	-0.1952	0.5661	0.1489	1									
APP	-0.2652	-0.3272	0.1633	0.3887	1								
FirmSize	0.2547	-0.3537	-0.2895	-0.5887	-0.3599	1							
CR	0.1672	0.3934	0.2732	0.0678	-0.2503	-0.1670	1						
CA	0.2064	0.3012	0.1753	0.1103	-0.1536	0.2254	0.0810	1					
SC	0.0431	0.1317	-0.2369	0.4858	0.1431	-0.3585	-0.2573	-0.2306	1				
CT	-0.7435	-0.2499	-0.0348	-0.1643	0.0733	0.1336	-0.4722	0.2179	-0.1396	1			
GDPgr (11)	0.0148	-0.0744	-0.0184	-0.0793	0.0046	0.0990	-0.0238	-0.0100	-0.0262	0.0586	1		
ExhRate (12)	-0.1229	-0.1349	-0.0479	-0.1529	-0.0230	0.3326	-0.0287	0.0453	-0.1691	0.2179	0.4603	1	
ElecStab(13)	0.0298	-0.0152	-0.0090	0.0267	0.0446	-0.1169	0.0163	-0.0556	0.0740	-0.0535	-0.0225	-0.2854	1

CCC=cash conversion cycle; RCP=receivables conversion period; ICP=inventory conversion period; APP=account payable period; FirmSize=Firm Size; CR=current ratio; CA= ratio of current asset to total asset; SC= ratio of stock to current asset; CT= ratio of current liabilities to total assets; ExhRate=GHS/ US$; GDPgr= annual real GDP growth; ElecStab=percentage of electricity production from hydroelectric sources; ownership= 0 for foreign firms and 1 for local firms

For regression analysis purposes, variables with absolute coefficients above 0.7 are not suitable for inclusion in the same model for regression analysis as independent variables since they present a problem known as multicollinearity. There is no evidence to suggest the presence of multicollinearity in the data.

The correlation matrix shows a negative but weak correlation between RCP and ROA at -0.0787. This is interpreted to mean that companies with a shorter collection period than debtors tend to get higher returns on the asset for employment. The longer RCP requires a higher investment in AR which means less cash available to cover outflows (Akoto et al., 2013). However, this relationship is very weak and is not statistically significant at 5%. The longer RCP requires a higher investment in AR, indicating that the available funds are less to cover outflows (Akoto et al., 2013).

The inventory conversion period in this study also showed an inverse relationship with ROA. This has been interpreted to mean that companies that have a shorter inventory conversion period perform better than companies that have longer inventory conversion periods. This is contrary to expectations as higher-performing companies have higher ICP (Deloof, 2003). This expectation is based on the idea that companies who buy wholesale raw materials have discounts and are expected to translate into higher profits due to cost savings. When they buy more than they need for immediate production, they tend to keep them longer and therefore end up with a longer ICP. In addition, a longer inventory period may be due to poor sales and therefore, lower profits (Eljelly, 2004). In addition, the shorter conversion period also means fewer opportunities for obsolescence and lower storage costs that feed into the company's profits (Afza & Nazir, 2007).

The correlation coefficient between APP and ROA for this study was -0.265. First, the negative sign shows an inverse relationship between the payment periods and the Return on Asset. This

means that companies that pay their debts quickly are more profitable. This is particularly true for companies with liquid funds. It is worth noting that profitability does not indicate liquidity. The ability to repay debt quickly is largely due to the company being liquid. This may also be due to a shorter collection period and a shorter conversion period (Makori & Jagongo, 2013; Mathuva, 2010). If a company is able to quickly convert raw materials into finished goods and is able to quickly collect revenue from debtors, it is expected that this company will also pay its creditors quickly. This cycle of events will make the company more profitable.

Although the CCC components discussed above have shown mainly a negative correlation with ROA, the CCC has a positive relationship with ROA. First, contrary to expectations, this means that companies with a longer CCC perform better than companies that have a lower CCC. Furthermore, the size (0.0094) of the correlation indicates that the relationship between CCC and ROA is weak.

Larger companies are expected to be more profitable than small businesses. The correlation between the size of the company and the Return on Assets (ROA) of this study is positive. This suggests that large companies tend to be more profitable. Large firms tend to have greater bargaining power and can therefore obtain more favourable credit terms from suppliers and can buy wholesale (Baños-Caballero, García-Teruel, & Martínez-Solano, 2010; Beasley, Pagach, & Warr, 2007). In addition, they are also likely to be diverse in scope and structure (Gordon, Loeb, & Tseng, 2009).

Apart from exchange rates, all other macroeconomic variables have a positive correlation with the Return on Assets. The information contained in this correlation coefficient indicates that when the value of the Cedi depreciates or decreases, the listed companies perform poorly. This

means that a stronger domestic currency is associated with higher performance for listed companies. This is partly explained by the dependence of domestic non-financial firms on imported inputs. A weak currency will increase production costs and lower profits.

The correlations show that high Gross Domestic Product (GDP) growth is associated with better performance for the company and a stable electricity supply is associated with improving the company's performance. Results are consistent with expectations. Economic growth is usually accompanied by increased expenditure with increased household income. This increased spending will improve sales and profits. On the other hand, the stability of electricity is expected to result in better performance for companies, especially the electricity-based industrial companies in their production. Despite signs of macroeconomic variables, it should be noted that they have very small correlation coefficients with ROA.

The correlation coefficient between CR and ROA is 0.167 and the coefficient between CA and ROA is 0.206. This indicates that the correlation with ROA is stronger for CA than CR. CA has the same denominator as ROA, the total assets, and thus, moves in the same direction more than CR, which uses only current assets, a component of the asset. Given the definition of CA in this study, it can be said that companies that invest more money in WC will achieve higher returns.

4.4 Results of the Regression

This section presents and discusses the results of the regression estimates that were obtained for this study. The full sample results are presented first and are followed by the foreign and local sub-sample results. The presentation shows results for fixed effects. The Hausman Test performed selected FE as the most appropriate technique for the regression analysis.

4.4.1 Hausman Test Results

Table 4.3 below show results for the Hausman test conducted to select the most appropriate technique between Fixed Effects and random effects. The Null Hypothesis for the Hausman test is that the random effect is the desired technique, while the alternate hypothesis is that the fixed effect is the desired technique. Column two presents results for the full sample, column three for the foreign sample and column four for the local sample. The results in all three columns led to the rejection of the Null Hypothesis and led to the conclusion that the alternative is true. Thus, the Fixed Effects technique was operationalised for the study.

H_o: RE is appropriate

H_1: FE is appropriate

Table 4. 3 Hausman Test Results

Model	Full sample	Foreign sample	Local sample
chi2(9)	19.47	27.63	21.45
Prob>chi2	0.0215	0.0000	0.0060
Conclusion- Reject null, hence, FE is appropriate			

Source: Research Data, 2018.

4.4.2 Full Sample Regression Results

This sub-section presents and discusses the results for the full sample. It discusses the relationship between working capital variables and the performance of non-financial firms listed on the Ghana stock exchange over the study period. The full sample regression results are shown in Table 4.4 below.

This variable shows a negative relationship with ROA which is as expected. This relationship is however not statistically significant. This suggests that overall firms do not achieve better performance because of better WCM practices, but that this observed relationship may be due to other factors. We can also infer from the descriptive statistic that the size of the coefficient of CCC that the relationship is not economically significant. With a coefficient of -0.00010, it means that reducing the cash conversion cycle by thirty (30) days will lead to an increase in the ROA by 0.0030 percentage point. We can, therefore, conclude that Working Capital Management does not significantly affect profitability for firms in the sample.

On the components of WCM from the correlation matrix, the positive relationship between Receivable Collection Period and Average Payable Period and ROA can also be regarded to be due to chance because it shows no statistical significance. The researcher concluded that although having shorter receivables and payables periods are associated with higher ROA; the researcher cannot infer that the higher ROA is as a result of the length of the RCP or APP. These findings confirm findings by previous studies (Aregbeyen, 2013; Gakure, Cheluget, Olnyango and Keraro, 2012; Goel et al 2015; Kumar, 2014; Lyngstadaas & Berg, 2016).

Overall, the results obtained for the full sample regression show semblance to Sarkar and Goswami (2011) who studied the impact of WCM on firm profitability in an emerging economy,

India, and found that a range of WCM proxies did not have any significant relationship with profitability. A similar finding was obtained in the contest of Pakistan, also a developing country, by Gul, Khan, Rehman, and Khan (2013) who studied small and medium enterprises (SMEs) in Pakistan and found that the proxies for WCM and profitability that were used in their study did not impact the profitability of these firms. These findings are however not limited to developing countries nor SMEs, as a study of firms listed on the Saudi Arabia Stock exchange by Almazari (2013) found that factors other than WCM variables were responsible for determining the profitability of those firms.

Almazari (2013)'s findings show that what mattered for the success of firms included firm size and liquidity. The results obtained in this study for firm size and liquidity in all three tables (Foreign Sample, Local Sample and Full Sample) confirm Almazari (2013)'s results. Some of the control variables included largely has significant relationships with profitability. For instance, firm size shows a strong relationship with profitability across all columns. CA, which is a liquidity measure, has a strong and consistent relationship in all columns (Almarazi, 2014; Baker, Kumar, Colombage, & Singh, 2017; Kumar, 2014). Goel, (2015) Macroeconomic variables such as exchange rates have also shown a statistically significant relationship with profitability in column three of Table 4.4 below. In this instance, the results show that depreciation of the domestic currency was detrimental to the profitability of the firms. This can be explained to be due to the fact that firms in Ghana have substantial liabilities in foreign currencies. Many of these firms use inputs that are obtained from outside the country. Moreover, the cedi has consistently depreciated for more than three decades (Abor, 2005; Alagidede & Ibrahim, 2016; Kyereboah-Coleman & Agyire-Tettey, 2008). This results in foreign exchange losses to firms operating in Ghana and this affects their profitability adversely.

Table 4. 4 Results for the full sample

	(1)	(2)	(3)	(4)
VARIABLES	ROA	ROA	ROA	ROA
RCP	-0.00011			
	(0.00021)			
ICP		-0.00002		
		(0.00013)		
APP			0.00004	
			(0.00008)	
CCC				-0.00010
				(0.00007)
Firm Size	0.03943***	0.02772***	0.02937***	0.02619***
	(0.00794)	(0.00535)	(0.00526)	(0.00522)
CR	-0.06774***	-0.00110	0.00022	0.00030
	(0.01555)	(0.00750)	(0.00800)	(0.00808)
CA	0.65118***	0.22635***	0.22123***	0.25475***
	(0.10280)	(0.05466)	(0.05357)	(0.05194)
SC	0.02371	-0.02964	-0.03311	-0.02280
	(0.05480)	(0.05149)	(0.03734)	(0.04010)
CT	-1.04224***	-0.29656***	-0.29304***	-0.30985***
	(0.13707)	(0.05460)	(0.05412)	(0.05383)
GDPgr	0.00864	0.00396	0.00394	0.00393
	(0.00548)	(0.00268)	(0.00269)	(0.00267)
ExchRate	-0.02355	-0.03870	-0.04157*	-0.03899
	(0.03633)	(0.02417)	(0.02434)	(0.02451)
ElectStab	0.00121	0.00016	0.00016	0.00010
	(0.00119)	(0.00075)	(0.00075)	(0.00075)
Constant	-0.52096***	-0.39009***	-0.42221***	-0.37040***
	(0.15330)	(0.10270)	(0.10339)	(0.10181)
	166	165	165	165
R-squared	0.86201	0.46121	0.46202	0.46934

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Source: Research Data, 2018.

4.4.3 Regression Results for Foreign and Local Sub-Samples

The results for the foreign sub-sample are presented in Table 4.5 below. In the table, column one presents results for APP as a measure of WCM, column two presents results for ICP as a measure of WCM, column three for RCP as a measure of WCM and column four presents results for CCC as a composite measure of WCM. The results in these columns follow a pattern similar to what was found by Cote and Latham (1999) and Akinlo (2011) for firms in Nigeria. The results in column one show a positive and statistically significant relationship between APP and ROA just as discovered by Cote and Latham (1999). What this means is that among the foreign firms, those who have longer payment periods tend to have higher profitability. This is contrary to expectation. It was expected that firms who take longer to pay their liabilities would be less profitable, since doing so would make them less creditworthy in the sight of their creditors and so, they would not be able to obtain further credit going forward. Firms who take longer to pay their liabilities are also expected to obtain credit at a higher cost, which should affect their profits adversely. The researcher explains his findings to mean that creditors may have a different view of foreign companies, since these companies are usually perceived to be more creditworthy, given their better financial position.

It could be inferred that even though these firms may have large sums of payables in their books, there could be a regular payment being made to creditors, which keeps the relationship healthy. That is, although the stock of liabilities may be high at one point in time, the flow within the stock may be good, hence, the better credit position. The researcher also notes that this result is more economically significant than the full sample results emphasising the importance of payables payment period to foreign firms.

Table 4. 5 Result for foreign sample

	(1)	(2)	(3)	(4)
VARIABLES	ROA	ROA	ROA	ROA
APP	0.00084*			
	(0.00038)			
ICP		-0.00009		
		(0.00011)		
RCP			0.00078	
			(0.00040)	
CCC				-0.00052*
				(0.00020)
FirmSize	0.09007**	0.06152	0.06899*	0.07213*
	(0.02732)	(0.03714)	(0.03028)	(0.03389)
CR	0.00006	-0.00103	-0.00190	0.00918
	(0.01632)	(0.01379)	(0.01030)	(0.01311)
CA	0.10332	0.17475***	0.17084***	0.13555**
	(0.05367)	(0.03985)	(0.03577)	(0.05213)
SC	0.01128	0.04974	0.07132	0.06133
	(0.04759)	(0.06336)	(0.06185)	(0.04158)
CT	-0.01823	-0.07438*	-0.06950*	-0.04180
	(0.06109)	(0.03370)	(0.02824)	(0.04724)
GDPgr	0.00237	0.00235	0.00183	0.00153
	(0.00239)	(0.00247)	(0.00215)	(0.00200)
ExhRate	-0.08811*	-0.04238	-0.04790	-0.06263
	(0.03718)	(0.04952)	(0.03867)	(0.04863)
ElecStab	0.00226	0.00205	0.00224	0.00199
	(0.00115)	(0.00180)	(0.00161)	(0.00153)
Constant	-1.68865**	-1.18088	-1.36858*	-1.31193*
	(0.48040)	(0.66155)	(0.54158)	(0.57804)
Observations	57	57	57	57
R-squared	0.48061	0.32845	0.36361	0.40610
Number of CompanyCode	6	6	6	6

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Source: Research Data, 2018.

The finding for APP is similar to Tingbani (2015) who found that APP had a positive and significant relationship with WCM for UK firms that were listed on the London Stock Exchange. Our Finding was consistent with findings from relatively developed countries (Brennan et al., 1988; Emery, 1984; Ferris, 1981; Nazir & Afza, 2009b; Petersen & Rajan, 1997; Schwartz & Whitcomb, 1979). In a related study, Baños-Caballero et al (2013) back the assertion that when firms relax their credit period, their storage costs of excess inventories tend to reduce and thus, help to enhance their financial performance. Similar results were obtained by (Blinder & Maccini, 1991; Deloof & Jegers, 1996; Ejell, 1994; Schiff & Lieber, 1974; Shipley & Davis, 1991) who justify the positive relationship between APP and profitability on the basis of how effective WCM is used as an effective price cut, whereas Brennan et al. (1988) and Petersen and Rajan (1997) confirm that WCM has a positive effect on firm performance due to the ability to encourage clients to acquire merchandise in times of low demand (Emery, 1984). Moreover, Ferris (1981) and Emery (1984) iterate that the ability of effective WCM to reduce transaction costs and strengthen long-term supplier-customer relationships offers enough grounds to establish a direct link between WCM and firm performance (Raymond Fisman & Love, 2003; Ng et al., 1999; Wilner, 2000).

The results for ICP are presented in column two of the foreign sample. It shows that ICP does not affect firm profitability for foreign firms. ICP has a negative sign as expected. This suggests that converting raw materials into finished goods and then to cash sales quickly appears to be associated with higher profitability, but this is entirely due to chance. In column three of the foreign sample, the researcher finds that RCP has a positive coefficient which was not statistically significant. This finding is similar to Cote and Latham (1999) and Jayarathne (2014).

In column four of the foreign sample, it can be seen the results for CCC shows a negative relationship and a statistically significant one between CCC and ROA. This means that firms who have shorter CCC are more profitable. This is as expected since a shorter cycle is generally an indication of better liquidity and lower financing costs. Because CCC is a composite measure of WCM, the researcher can conclude that better WCM enhances the profitability of foreign firms. This, however, is due mainly to longer payment periods that the foreign firms enjoy from creditors which allow them greater liquidity. This finding resonates with the findings of Gill et al. (2010) who examined the relationship between WCM and firm profitability of US firms and found that shorter CCC were also more profitable as in other studies in developed countries (Cheng & Pike, 2003; Deloof, 2003c; Dong & Su, 2010; García-Teruel & Martínez-Solano, 2007; Jose, Lancaster, & Stevens, 1996; Sharma & Kumar, 2011b; Shin & Soenen, 1998; Tingbani, 2015; Wang, 2002). Also, Alipour (2011) studied listed firms on the Tehran Stock Exchange and obtained a similar result. Sharma et al explained that by minimising the investment in WC, firms enhance their profitability as a result of lower cost of financing and less reliance on external finance, reduced administrative costs, and fewer debt defaults.

Regarding the control variables, it can be seen from the table 4.4 and table 4.5 that exchange rates and size do not play an important role in the performance of the foreign firms. This could be due to the fact that some foreign companies usually maintain the United States Dollar (USD) as their operational currency. Also, these companies may have strong treasury departments that are able to manage their foreign exchange exposure. The non-significance of size can be explained to be due to the fact that the laws of Ghana do not permit foreign firms to operate in the SME sectors. This means that foreign firms will generally be big, hence, there is likely to be less variation in their size and this could explain why the result is not significant.

The local sub-sample results are presented in Table 4.6 below. With the exception of RCP in column three, all other working capital variables were not statistically significant. The results largely show that WCM does not matter for the profitability of local firms. This is likened to results by Sarkar and Goswami (2011) in the context of India and Gul, Khan, Rehman, and Khan (2013) in the context of Pakistan. It also reflects the results for the full sample. This means that the local sample was driving the full sample results. Gul, Khan, Rehman, and Khan (2013)'s results were on listed SMEs. It can be argued that local companies are generally smaller than foreign companies due to the fact that there are laws that restrict foreign direct investments where the capital of the companies is below certain thresholds. This varies from sector to sector. Coupled with the results by Gul, Khan, Rehman, and Khan (2013), it can be argued that WCM is generally not a causal factor in the profitability of small firms. In the case of Gul, Khan, Rehman, and Khan (2013), they found that what mattered for SME profitability was their size.

Table 4. 6 Results for local firms

	(1)	(2)	(3)	(4)
VARIABLES	ROA	ROA	ROA	ROA
APP	0.00005			
	(0.00009)			
ICP		-0.00005		
		(0.00013)		
RCP			0.00065*	
			(0.00031)	
CCC				0.00003
				(0.00012)
FirmSize	0.08581***	0.07926***	0.12164*	0.08742***
	(0.02434)	(0.02016)	(0.06443)	(0.02531)
CR	0.02432*	0.02214*	-0.05883*	0.02304*
	(0.01334)	(0.01100)	(0.02715)	(0.01252)
CA	0.11479	0.12136	0.61320***	0.10165
	(0.13190)	(0.11571)	(0.15966)	(0.13153)
SC	-0.10417*	-0.07887	0.22709*	-0.10486
	(0.05536)	(0.09169)	(0.10620)	(0.06423)
CT	-0.08659	-0.08086	-1.04289***	-0.06091
	(0.07258)	(0.07264)	(0.10485)	(0.07520)
GDPgr	0.00068	0.00086	0.01114	0.00043
	(0.00280)	(0.00268)	(0.00790)	(0.00308)
ExhRate	-0.17713***	-0.16733***	-0.09796	-0.17650***
	(0.04489)	(0.03680)	(0.07955)	(0.04509)
ElecStab	-0.00036	-0.00046	0.00041	-0.00035
	(0.00051)	(0.00066)	(0.00177)	(0.00049)
Constant	-1.19221***	-1.08778***	-1.91766*	-1.21373***
	(0.35684)	(0.30694)	(1.03335)	(0.33546)
Observations	108	108	109	108
R-squared	0.48365	0.48299	0.91763	0.48257
Number of CompanyCode	12	12	12	12

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Source: Research Data, 2018.

For the control variables, it can be seen from all columns that what matters most for local firms is their size. Bigger firms among local listed firms are significantly more profitable. For instance, the results show that increasing firm size by about 1% could increase profitability by at least 8% and up to 12%. The second most important variable that affects the profitability of local firms is the exchange rate. It can be seen from all columns that depreciation of the cedi results in high losses to local firms. This is mainly as a result of the dependence of these firms on imported inputs. Liquidity also shows significant effects on profitability. These findings are similar to Almazari (2013)'s findings that showed that what mattered for the success of firms included firm size and liquidity (Almarazi, 2014; Baker, Kumar, Colombage, Singh, 2017; Kumar, 2014). The exchange rate results can be explained to be as a result of the fact that firms in Ghana have transactions in foreign currencies. Many of these firms use imported inputs and equipment. Coupled with the constant depreciation of the cedi, this is expected to result in losses for those firms, hence, lower profits (Abor, 2005; Alagidede & Ibrahim, 2016; Kyereboah-Coleman & Agyire-Tettey, 2008).

4.4.4 Summary of Local and Foreign Firms' Sub-Samples Results

The result shows a positive and statistically significant relationship between APP and ROA as in Cote and Latham (1999) for foreign firms but APP is not significant for local firms. What this means is that among the foreign firms, those that have longer payment periods tend to have higher profitability, but that this is opposite in the case of local firms. This is contrary to expectation for both local and that of the foreign firms. It was expected that firms which take longer to pay their liabilities would be less profitable, as doing so would make them less creditworthy in the sight of their creditors and so, they would not be able to obtain further credit going forward. Firms that take longer to pay their liabilities are also expected to obtain credit at a

higher cost which should affect their profits adversely. The researcher explains his findings to mean that creditors may have a different view of foreign companies compared to the local firms, for these foreign companies are usually perceived to be more creditworthy.

It could be inferred in the case of foreign firms that even though these firms may have relatively larger liabilities, they may be servicing these liabilities regularly; hence, they would enjoy favourable terms from creditor. The researcher also notes that this result is more economically significant to foreign firms than to the local sample and that of the full sample. The results emphasise the importance of payables payment period to foreign firms.

The results for ICP are presented in column two of all tables for full, local and foreign samples show a consistent outcome. They show that ICP does not affect firm profitability for foreign, local and that of full sampled firms. ICP has a negative sign in each case as expected. This suggests that converting raw materials into finished goods and then to cash sales quickly appears to be associated with higher profitability, but this is entirely due to chance. In column three, the researcher finds that RCP has mixed results in each of the tables. It is positive for both local and foreign samples but only statistically significant in the local sample.

In column four, it can be seen that the sign of the coefficient for CCC is similar for foreign firms and that of the local firms. It shows a negative relationship and a statistically significant relationship between CCC and ROA for foreign firms but insignificant for the local and full samples. This means that foreign firms which had shorter CCC are more profitable. Because CCC is a composite measure of WCM, the researcher can conclude that better WCM enhances the profitability of foreign firms. This, however, is due mainly to longer payment periods that the foreign firms enjoy from creditors which allow them greater liquidity.

It can, thus, be concluded that the impact of Working Capital Management differs for local and foreign firms. While foreign firms benefit from longer payables periods and shorter cash conversion cycles, local firms benefit from shorter receivables collection periods.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

The purpose of this chapter is to present a summary of the findings for this study and the conclusions reached from the study. The chapter ends with some recommendations that are appropriate to the study's findings.

5.2 Summary of Findings

The research investigates the relationship between Working Capital Management and firm profitability among GSE listed non-financial firms. The study also examines how this relationship differs among local and foreign listed firms. Five measures of Working Capital Management were used: Account Payable Period (APP), Inventory Conversion Period (ICP), Receivables Collection Period (RCP) and cash Conversion Cycle (CCC) and the Fixed Effects estimation technique was implemented.

The study finds a positive relationship between APP and ROA for all samples, that is, the full sample and the local and foreign sub-samples. This relationship is, however, only significant for foreign samples. This was interpreted to mean that a longer payable period was associated with higher profits. There is, nonetheless, a causal effect on profitability in only foreign firms. Thus, in terms of the payables period, foreign firms are different from local firms. Foreign firms can be seen to be using flexible trade credit as a means to enhance their profitability.

The relationship between ICP and ROA was found to be negative for all samples. This was interpreted to mean that shorter conversion periods for firms' inventory are generally associated with higher profitability. These relationships were not statistically significant; hence, the findings

do not suggest that shorter ICP will necessarily improve profits. The results for RCP differed from one sample to another. While it was positive in the foreign and local samples, it was negative in the full sample. It was, however, statistically significant only in the local sample. This was interpreted to mean that local firms were able to enhance their profitability by collecting debt early. Thus, local firms benefit from restricting the period of trade credit they granted their customers.

Finally, the findings also show that CCC has a negative relationship with ROA for all samples. It means that having a shorter operating cycle was associated with higher profitability. This relationship was significant only for the foreign sample, implying that shorter operating cycles could improve profitability significantly for foreign firms, but that was not the case for local firms. It was found that factors such as firm size and liquidity are more important for improving profitability of local firms.

5.3 Conclusion

The findings of the study led to the following conclusions: First, Working Capital Management has limited effects in determining the profitability of the listed firms that were sampled for this study. This was evidenced by the size of the parameter estimates obtained for the working capital variables. Secondly, good Working Capital Management has a more beneficial effect on the profitability of foreign firms than on local firms. This was evidenced by the significance of CCC in the foreign sample. Thirdly, the only working capital variable that can be said to be able to improve profitability of local firms is the receivables collection period. Thus, local firms can improve their profitability by shortening the time it takes to collect debts due them. Also, foreign firms can enhance their profitability by obtaining more flexible credit terms from their creditors and by taking advantage of the goodwill they have with creditors. Finally, the findings of the

study led to the conclusion that the Working Capital Management practices that work for local firms listed on the GSE do not yield the same results for their foreign counterparts.

5.4 Recommendations

Based on the findings of the study, it is recommended that foreign firms should negotiate more lenient and flexible trade credit periods with their creditors. Local firms, on the other hand should restrict the trade credit period allowed to their customers. Foreign firms should also aim at achieving overall shorter operating cycles in order to achieve the optimum level of profitability. Finally, local firms should pursue firm growth in order to enhance their profitability.

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