KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF HUMANITIES AND SOCIAL SCIENCE

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WORKING CAPITAL MANAGEMENT AND FIRM PERFORMANCE IN GHANA

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DECLARATION

I hereby declare that this submission is my own work toward the award of the Master of Business Administration in Finance and that to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

I dedicate this thesis work to my father, mother, siblings and my entire family for their contributions in my life and towards my education.

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ABSTRACT

Within the global corporate world, firms' ability to maintain steady liquidity is a major indication of fiscal well-being and a sign of efficient management, more so in emerging economies characterized by irregular shocks from the macro economy. In keeping in line with the fiscal well-being and maintenance of efficiency, firms take on various systems and procedures. Working capital management as an approach provides a firm the ability to bring into harmony the amount of cash locked up in debtors and stocks with payments to creditors. In the last two decades, literatures within financial management have sought to investigate the relation between working capital management and performance. Within the context of Ghana, the moderating role of macroeconomic indicators on the relation between working capital management and performance has received less attention. The study sought to fill this gap in literature by extending the study to other developing countries – Ghana- as well as adding another macroeconomic variable (exchange rate). The objectives of the study were to; examine the relationship between cash conversion cycle and firm performance of listed firms; assess the relation evident in macroeconomic indicators and performance of listed firms in Ghana; as well as to investigate how macroeconomic indicators moderate the relation that cash conversion cycle has on performance. Panel Regression Method was used for the estimation. Purposive sampling was used to select 18 firms with data from 2009 to 2018. The study found out that CCC is positively correlated with ROA. The study also found significant effects of inflation, GDP and exchange rates on ROA. The study recommends that managers monitor closely the changes to economic conditions as the economic conditions such as GDP has significant effect on firm performance.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVATIONS

CAR	Current Asset Ratio
CCC	Cash Conversion Cycle
CF	Cash Flow
CLR	Current Liabilities Ratio
EXCH	Exchange Rate
FFA	Fixed Financial Assets
GDP	Gross Domestic Product
INF	Inflation Rate
REVA	Revised Economic Value Added
ROA	Return on Assets
WCM	Working Capital Management

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Within the global corporate world, firms' ability to maintain steady liquidity is a major indication of fiscal well-being and a sign of efficient management, more so in emerging economies characterized by irregular shocks from the macro economy. In keeping in line with the fiscal well-being and maintenance of efficiency, firms take on systems and procedures (Soukhakian and Khodakarami, 2019). In Prasad et al (2018) and Soukhakian and Khodakarami (2019) view, firms' survival hinges on, all other things being equal, having enough fiscal resources to finance its long-term commitments as well as short term commitments. Raheman and Nasr (2007) and Samiloglu and Demirgunes (2008) echo this assertion by reiterating that a well-managed working capital is also vital as capital financing decisions since the absence of enough working capital inhibits the acquisition of non-current asset as well as affecting long-term financial performance (economic-oriented performance measure such as REVA).

Prasad et al (2018) defines working capital management as an approach that provides a firms' ability to bring into harmony the amount of cash locked up in debtors and stocks with payments to creditors. Kesmil and Gunay (2011) and Reason (2008) opine efficient management of working capital also gives firms competitive edge within economic boom seasons and stabilize the firms during economic recession. Scholars such as Altman (1968), Dunn and Cheatham (1993) and Shin and Soenen (1998) attribute firm failure with working capital inefficiency on the part of managers. Moussawi et al (2006) add on this by extending inefficiency to be overinvesting in working capital which tends to bring down the worth of a firm. Padachi and Howorth (2014) assert that working capital management efficiency promotes long-term survival whilst reducing bankruptcy cost and being solvent.

Most lately over 20 years ago, literature within financial management sought to investigate the relation between working capital management and performance (Deloof, 2003; Abuzayed, 2012; Bagh, 2016; Akoto et al, 2013; Enqvist, Graham and Nikkinen, 2014; Jakpar et al, 2017;) used only accounting-oriented performance measure (short term performance indicators). Stewart (1994) and Soukhakian and Khodakarami (2019) posit that these accounting-oriented measures do not provide a clear view of the firm and postulate that the use of economic value added (EVA) and revised economic value added (REVA) which predicts over 50% accurately in terms of performance than their counterpart. Again, these indicators measure the long-term performance of a firm, but sadly have less attention within corporate finance literature.

Narrowing in on the Ghanaian context characterized by an underdeveloped capital market, a bank-oriented economy, with high rate of inflation and an appetite for imported goods provide a fertile environment to conduct an investigation into the moderating role of macroeconomic indicators on the relation evident in WCM-performance. Soukhakian and Khodakarami (2019) called for an investigation and the use of economic-oriented performance measure as one of the indicators of profitability. Fewer studies exist on working capital management literature within emerging markets, more so Ghana. Of the few studies conducted more emphasis was placed on accounting-oriented performance measure (Fiador, 2016; Coleman, Wu and Baidoo, 2020, Mbawuni et al, 2016; Adjei and Yeboah, 2011; Akoto et al, 2013) at the expense of long-run performance measure. Soukhakian and Khodakarami (2019) call and the above fertile conditions within the Ghanaian setting provided the researcher with enough motivation to conduct this research and contribute to the growing thought on corporate finance literature.

1.2 Statement of the Problem

There is no literature within the context of Ghanaian setting, that has investigated the moderating role of macroeconomic indicators on the relation between working capital management and performance (here, performance connotes financial and economic measures of performance) to the best of the researcher's knowledge.

However, within the financial management literature, extensive research has focused on working capital management in relation with SME's profitability (Baños-Caballero, Garcìa-Teruel and Martìnez-Solano, 2012; Deloof, 2003; Bruwer and Meiring, 2017; Baker, Kumar and Singh, 2019; Lefbvre, 2020), supply chain perspective (Peng and Zhou, 2019), firm performance and/or profitability (Abuzayed, 2012; Bagh, 2016; Akoto et al, 2013; Enqvist, Graham and Nikkinen, 2014; Jakpar et al, 2017), cash holdings and firm value (Autukaite, 2011;), corporate governance (Fiador, 2016; Coleman, Wu and Baidoo, 2020), cash flow (Mazzarol and Reboud, 2020), moderating role of macroeconomic factors (Soukhakian and Khodakarami, 2019; Doruk and Ergün, 2019), determinants (Chiou et al, 2006; Mansoori and Muhammed, 2012; Moussa, 2019; Nyeadi, Sare and Aawar, 2018) among others. The researcher intends to fill this gap in two folds following the call of Soukhakian and Khodakarami, (2019) and Lefbvre (2020), firstly, to extend the study to other developing countries – Ghana- as well as adding another macroeconomic variable (exchange rate). Again, it provides first-hand empirical evidence on how these macroeconomic indicators moderate the relation of WCM-performance.

1.3 Objectives of the Study

This research provides insight on the moderating role of macroeconomic indicators on working capital management and performance of listed firms in Ghana.

i. To examine the relationship between cash conversion cycle and firm performance of listed firms.

ii. To assess the relation evident in macroeconomic indicators and performance of listed firms in Ghana.

iii. To investigate how macroeconomic indicators, moderate the relation that cash conversion cycle has on performance.

1.4 Research Questions

The researcher seeks answers to the following:

i. What is the relation between cash conversion cycle and firm performance listed Ghanaian firms?

ii. Do macroeconomic indicators affect the performance of listed firms in Ghana?

iii. Do macroeconomic indicators moderate the relation that cash conversion cycle has on performance?

1.5 Significance of the Study

This research has several implications on the economy, policy makers, management and literature. The focus is on an emerging market; Ghana characterized by a higher growth rate in terms of development and as such should not be left out. This research is key for policy makers since the findings places them with better information on how macroeconomic indicators influence the economy albeit WCM policies and as such implement appropriate directives to bring its effects to the barest minimum.

Management as stakeholder's benefits from this research since it provides evidence on how efficient management of working capital (inventories, receivables and payables) translates into improved performance of firms. Also, the result from the impact of inflation on the performance sheds light on the financing decisions that causes growth or decline in performance.

On literature, it extends the scope to cover the moderating role of macroeconomic factors on the relation working capital management has on performance whilst providing an avenue for future researchers to explore other gaps in the financial management literature.

1.6 Scope of the Study

This research centers on eighteen selected listed firms on the Ghana Stock Exchange using a ten-year period spanning from 2009-2018. The independent variable is cash conversion cycle which is a proxy for working capital management, with the dependent variable - performance - being operationalized using two specific performance measure, that is accounting-oriented measure and economic-oriented measure. The accounting-oriented measure is operationalized as ROA whilst the economic-oriented measure is operationalized using REVA. Again, the study used five firm level indicators as control measures and they are firm size, firm age, cash flow, current asset ratio, current liabilities ratio and non-current financial assets to total assets. Lastly, the macroeconomic parameters considered for this research is GDP, inflation and exchange rate. The estimation technique adopted for this research is the OLs technique.

1.7 Summary of Methodology

This research adopts the descriptive research design and the justification the selection is based on its suitability for facts finding and adequate interpretation. With respect to the source of data, this research utilized secondary data; put simply audited financial reports for the sample period. Samples of 18 firms were drawn out of the 37 listed firms on the Ghana Stock Exchange from 2009 to 2018. The sampling technique adopted was the purposive sampling. Additionally, information concerning the macroeconomic indicators used for this research was obtained from the World Bank database. Panel Regression Method was used for the estimation.

1.8 Limitations of the Study

This research is limited to sixteen listed manufacturing firms within the Ghanaian environs with a ten-year sample period (i.e. 2009 – 2018). This time period is restricted to 2009-2018 based on availability of audited financial statements with respect to the given sector under consideration. Above 2017, there was an instance of missing reports and mergers between two firms, hence the justification of the selection of the time period. On analysis, the study uses OLS technique. This research focuses on the macroeconomic factors moderating the effects of cash conversion cycle on firm value is limited to three, thus, GDP, inflation and exchange rate.

1.9 Organization of the study

This research is organized into five divisions. Introductory division deals with the background of the study, problem statement, objectives of the research, research questions, research relevance, and scope of the study as well as limitations of the study and how the research is organized. Chapter two concerns the literature review; it provides the conceptual review, theoretical review, empirical review, theoretical framework and the gap in research. Chapter three introduced an overview of the research method, the study design, study areas, population, sampling technique, data analysis and econometric model. Chapter four included the detailed analysis and discussion of result from the study. The last chapter provided summary of the overall study; highlighted major findings from the project, conclusion, recommendations, and suggestions for further studies.

CHAPTER TWO

LITERATURE REVIEW

This branch of the research concerns with the link between working capital management and firm performance of listed Ghanaian firms. Hence, structured into four main themes. The introductory theme addresses the conceptual definitions of key terms such as working capital management concepts, organizational performance concepts, factors influencing working capital management, strategies of working capital management. Agency theory, pecking order theory, trade-off theory and contingency theory are the main underlying theories identified in literature and it is explored in the next theme following the introductory theme. The third theme explores the stock of literature findings, which is presented under this theme. The last theme illustrate the link with the various components of the topic and provides a snapshot of the research, thus it gives the research framework.

2.1 Conceptual Literature Review

2.1.1 Definition of Working Capital

Andreou et al (2013) and Carmeli and Tishler (2004) opine that the secret recipe in averting corporate failure is an efficient and effective management of resources. Put in not so many a word, efficient utilization of working capital management is often one of the key areas which gives an edge. Stemming down, the term working capital does not lend itself to a single definition. Whilst some view it to be the lifeblood of any firm or unit within a society, an asseveration standing on the shoulders of an economic entity, either operating for profit or otherwise and irrespective of the nature and size of operations, must have an essential level of working capital to be in operation. Echoing this Fiador (2016) adds that before projects are appraised and funds invested, an assessment is done not only on the fixed components of assets but consideration is also given to the current ones as well.

It is in this spirit, that many advocates subscribe to the assertion that whether an economic entity will succeed or fail is largely owed to the WCM nature. There is a deficit in working capital when current liabilities exceeds current assets which gives an indication that the economic unit is not on good-standing to honour current obligations arising. Prasad et al (2018) share the view that working capital management is an approach that provides a firm with the ability to bring into harmony the amount of cash locked up in debtors and stocks with payments to creditors. Ukaegbu (2014) adds a voice by affirming that WCM has a key impact on performance. To ensure solvency and profitability, economic entities maintain a very low amount in the components of working capital.

2.1.2 Overview of Manufacturing Sector

The economy of Ghana has been segmented under three main segments comprising of agriculture sector, industrial sector and services (mostly financial firms). This overview restricts its scope to cover only agricultural and industrial sector to be the recognized under the manufacturing sector. Within the Ghanaian hemisphere in terms of performance has taken a dive under during 2017 with a growth rate of 19.3 percent. The shortfall came about as a result of the postponement of the FPSO Turret Remediation Project to 2018 and the increased in revenue from the Sankofa-Gye Nyame and Tweneboa Enyenra Ntomme oil fields.

With this sector, its coverage spans 16 out of the 33 sub-sectors within the international standard classification of industries. The sector contributed 5.63 percent to the gross domestic product pool in 2016. Though, consistently the sector has witnessed a reduction over the last five years, in terms of contribution, to GDP since 2012 of 10.2 percent contribution. Stemming from the last census in 2003, relatively the size of the manufacturing firms was over 25,000 with an employment capacity of 245, 000 individuals. The highlights included the breakdown of the manufacturing firms with respect to staff ratio; micro-firms employed not more than four workers with the highest domination of 55 percent, followed by SME's with coverage of 45 percent and employed not less than 5 but not exceeding 99 workers depending on the category the SME fall in terms of size.

Another notable observation was that, most of the manufacturing firms were highly concentrated in the Greater Accra and Ashanti region. Also, the percentage of expertise was categorized under unskilled, skilled and professional representing 50%, 40% and 5% respectively. The sector can further be divided into heavy manufacturing and light manufacturing. Whereas heavy manufacturing comprised of metal production firms, chemical firms, construction firms and cement and quarrying firms, light manufacturing firms comprised of pharmaceutical establishments, wood processing firms and textile firms.

2.1.3 Factors influencing Firm Performance

For the purpose of this research, firm performance connotes short-run and long-run performance. With the former being attributable to accounting-oriented indicators (Lefbvre, 2020; Salehi et al, 2018; Azami and Tabar, 2016; Moussa, 2019; Gill and Biger, 2013) and the latter, economic-oriented indicators (Raheman and Nasr, 2007; Samiloglu and Demirgunes, 2008; Soukhakian and Khodakarami, 2019). In measuring accounting-oriented performance, return on assets has been used whereas in measuring economic-oriented performance REVA (Revised Economic Value Added) has been employed. REVA has been employed over other economic measures because it gives an improved investor return adequacy (Bacidore et al, 1997).

Within financial management literature, the factors that drives the performance of firms has been identified from firm-level parameters (firm size, firm age, leverage, current ratio, current liabilities ratio, asset tangibiliity), via industry level parameters, to macro-level parameters (inflation, GDP, exchange rate) have been used extensively (Fiador, 2016; Gill and Berger, 2013; Moussa, 2019; Salehi et al, 2018; Nyeadi, Sare and Aawar, 2018; Chauhan, 2019; Soukhakian and Khodakarami, 2019; Lefebvre, 2010).

2.1.4 Firm-Level Factors

With respect to this research firm-level factors are used interchangeably with internal factors or firm-specific determinants. Why internal factors? The answer to this question lies on the premise that these are the factors that management has the capacity to control and can either bring about growth or decline in performance. Put differently, all indicators which influence can be exerted on by management to influence the outcome of the firm. This research limits itself to the use of firm size, firm age, leverage, current asset ratio, current liabilities ratio, tangibility and cash conversion cycle.

2.1.5 Macro-Level Factors

Similarly, macro–level factors so far as this research is concerned have been used interchangeably with external factors or macro-based factors. All factors that have its ultimate control beyond the capacity of managers yet are vital to short-term decisions. Also, this research limits itself to the use of GDP, inflation and exchange rate as moderators to the link between WCM-performance.

2.1.6 Working Capital Management Strategies Employed

The whole essence of managing working capital is to have an optimal capital structure. Isshaq et al (2009) assert that of all the components of working capital, cash is highly susceptible to management misappropriations. Keynesian advocates such as Besley and Brigham (2005), Gill and Shah (2012) and Kim et al (2011) hypothesize that money is demanded for precautionary, speculative and transactional purposes. Transactional motives relate to cash kept for the payment of items on a daily basis. When money is kept as cover against unpredictable changes and shocks it serves the motive of precaution. Speculative motive refers to an economic entity's hunger for capitalizing on price changes that may occur. Proponents of Keynesian hypothesis assert that except speculative motive, the other motives are pivotal in the amount of cash held.

It is in this spirit that management employs strategies to have the required level of working capital to prevent the rise of either deficiency or surplus in working capital. The strategies available to management so far as working capital management is concerned are three; hedging strategy, conservative strategy and aggressive strategy (Weinraub and Vischer, 1998). Management adopts these strategies in line with the overall mission and vision of the firm as well as the risk appetite of the management team.

An aggressive WCM strategy is attractive to a particular management team of a firm when their principal objectives is attainment of high volumes of returns. Practically, this strategy thrives on the relation between risk-return and as such more attention is given to projects with high level of risk since its expected compensation in terms of return will be high. During period of economic boom and accelerated growth, aggressive strategy is the preferred strategy (Soukhakian and Khodakarami, 2019). Wasiuzzaman and Arumugam (2013) advocates that during period of recession, it is highly normal for economic entities to hold a low level of working capital. Notwithstanding the numerous benefits accruing to this strategy, an out-of-stock scenario cannot be averted since it thrives on keeping the barest level of inventory.

When the risk appetite level of a management team is low, they are highly likely to adopt the conservative strategy. By extension, the lower risk attracts lower returns. Another key feature of the conservative strategy is that it has the least liquidity risk characterized by a more cost of capital. This is explained with the fact that debtors being allowed to have a longer payment holdback and the tradeoff of keeping large volumes of inventory which calls for credit facilities to be able to meet operational needs. Proponents of this strategy such as Shipley and Davis (1991) and Wilson and Summers (2002) believe that it promotes customer loyalty as well as no halts in the production process. However, critics argue that this strategy locks up capital, increases the cost of capital, and calls for insurance and warehousing cost as the main setbacks of this strategy (Kim and Chung, 1990; Kieschnick et al, 2013).

A moderate risk taker or risk-taking team is likely to adopt the hedging strategy. The moderate risk reflects in moderate returns. Being practical, when there is the need for the acquisition of non-current asset, long-term financing is utilized whereas when there is the need to acquire current assets, short term financing are utilized. In reality, the adoption of this strategy is fictional since it merges the other two strategies together, (i.e. it overcomes the shortfalls of both the aggressive strategy and conservative strategy).

2.2 Theoretical Literature Review

This section discusses the theories that relate to the working capital management and firm's profitability. Theories of working capital management are applicable to run an organization. These theories are designed and developed for promising positive cash flow and maximizing the profit to stakeholders. Working capital theories comprise of large complex strategies for administration, maintenance of financial operations and minimizing risk involve in different aspects of such operations. By using financial management theories and principles, it becomes easy for executives to figure out way to handle various affairs of an organization. Some of the theories that are applicable to run an organization are as follows:

2.2.1 Agency Theory

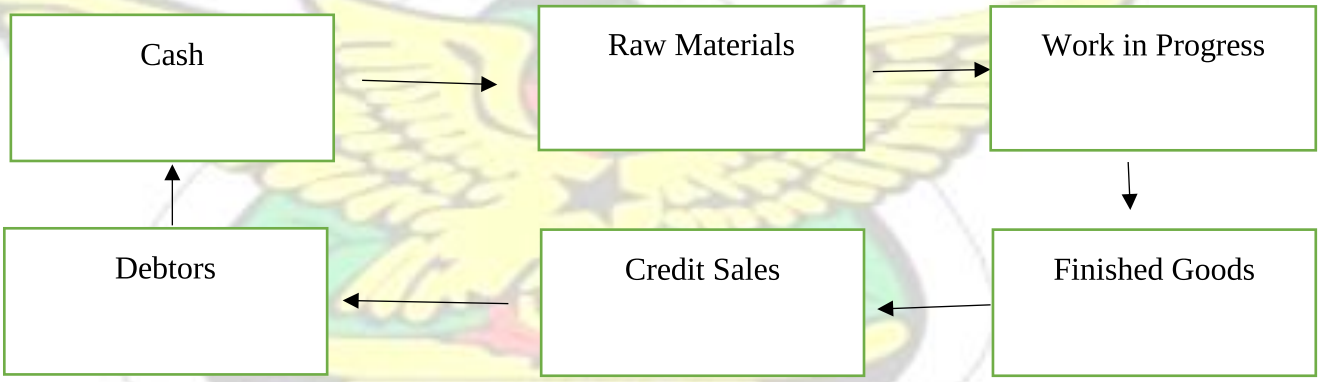
Agency theory deals with the people who own a business enterprise and all others who have interest in it like managers, banks, creditors, family members and employees. The agency theory postulates that the day to day running of a business enterprise is carried out by managers as the agents who have been engaged by the owners of the business as principals who are also known as shareholders. This theory places emphasis on transaction costs, contracting analysis following the work of Coase (1937) Jensen and Meckling (1976) and most important, Stiglitz and Weiss (1981). The work of these writers all point to the challenges that surround ownership, contractual agreements, management interrelationship, credit rationing etc between SMEs and external providers of finance, thereby subjecting firms to the risk of asset substitution which in practice means a change in the firm's asset structure. For very small and micro-enterprises this asset substitution may well take place between the enterprise and the owner's household. As described in the report by South African Reserve Bank (2004). The presence of these problems in firms may explain the greater use of collateral lending to firms as a way of dealing with these agency problems. Lenders strategies for dealing with these problems also add significantly to the cost of dealing with this sector. For a large enterprise the evaluation of an application for finance may be limited to the assessment of an (audited) set of financial statements and supporting documentation provided by the applicant, while for SMEs the assessment frequently has to go far beyond this, implying a substantially higher transaction cost. The theory is on the notion of the principle of two-sided transaction. It holds that any financial transactions involve two parties and both act on best interest but with different expectations. The major problem associated with this theory includes information asymmetry, moral hazard and adverse selection (Kwame, 2010). According to Stiglitz and Weiss (1981), agency problems such as asymmetric information and moral hazards can impact on the availability of credit and hence the capital structure of SMEs. Stiglitz and Weiss termed this phenomenon as credit rationing.

2.2.2 Transaction Cost Theory

The Transaction Cost Theory was formulated by Commons (1934) and reinforced by Coase (1937), Arrow (1969, 1974) and Williamson (1985, 1991). According to Arrow (1969), transaction costs are the costs involved in running the economic system. Coase (1988) suggests that there are always costs for carrying out market transactions. Therefore, a firm would prefer transactions to be organized within the firm if the cost would be less than the cost of carrying out the transaction in the market. However, as the additional costs of transactions within the firm exceed the cost of carrying out the transaction through the market, firms attempt to reduce transaction costs by vertical integration (Williamson, 1991). Therefore, the rationale behind the transaction cost theory is that market costs are usually too high for firms to overcome individually. This leads to the creation of linkages for small firms (Thorelli, 1986). From a transaction theory perspective, a firm needs to consider two main costs, market transaction costs and control costs, as their part of internationalization process (Williamson, 1985; Hennart, 1989). These costs occur as the result of environmental and behavioral uncertainties, opportunism, and asset specificity (RindfleischHeide, 1997). Heide (1994) states both environmental and behavioral uncertainties refer to the market changes that is unpredictable together with the uncertainty of possible firm action of reaction. Such unpredictability leads to the contractual constraints, which denote every possibility and consequent response become more ineffective (Heide, 1994). The opportunism can be defined as acting based on self-interest with astuteness (Williamson, 1985). Lastly, Williamson (1985) also suggests that asset specificity refers to the fact that the relation between partners is transaction-specific assets that cannot be reorganized easily. Transaction cost theory (TCE) at its core, focuses on transaction and the costs that attend completing transactions by one institutional mode rather than 38 another (Williamson, 1975). The transaction, a transfer of a good or service is the unit of analysis in the TCT and the means of effecting the transaction is the principal outcome of interest (Williamson, 1985). The theory's central claim is that transactions will be handled in such a way as to minimize the costs involved in carrying them out. The goods in this case refer to finances committed to for working capital management. In working capital management, the four elements cash, debtors, stock and creditors stand out as the key problems, whose management involves rigorous planning and resource commitment. For example, stocks can be modeled mathematically to formulate a basic policy outlining when stocks should be ordered, what quantity and the associated cost. In a SME environment, the tools for such action may be lacking or the cost of such adoption may offset the benefits of use. In most practical circumstances, firms can choose between the relative benefits of two basic types of strategies for net working capital management; they can minimize working capital investment or they can adopt working capital policies designed to increase sales. Thus, the management of a firm has to evaluate the trade-off between expected profitability and risk each of them representing an opportunity cost of the other before deciding the optimal level of investment in current assets.

2.2.3 Working Capital Cycle Theory

The theory states that working capital management following a cycle depending on the kind of company under analysis (Brealey & Myers, 2002). Using such cycle, a company can determine its working capital needs at any point in time. By definition, the working capital cycle is that duration it takes for a company to convert its cash into raw materials or finished goods to the time it receives cash from its debtors. The cycle will vary from company to company and as such should be computed bearing in mind the characteristic features of the company such as its size, its products, its asset, etc. According to Brealey & Myers (2002) working capital cycle for a manufacturing company will look like as follows: I. Cash is converted into a raw material. Raw materials are converted into work-in-progress. III. Work-in-progress is converted into finished goods stock. IV. Finished goods stock is converted into debtors (trade credit). V. Debtors are converted into cash. It can be illustrated diagrammatically as follows:



2.3 Empirical Review and Hypothesis Formulation

A dive into working capital management review brings to the fore that there is much attention and concentration on working capital management or requirements and performance, yet research into the moderating role of external drivers are at infancy. This division has been segmented under four main sub-sections namely; studies from developed countries, studies from African countries and studies from Ghana.

2.3.1 Studies from Developed Countries

Soukhakian and Khodakarami (2019) investigated the moderating effect of external drivers on the link shared by WCM-performance within the context of 111 Iranian firms for a seven year period beginning from 2010. The findings reveal that cash conversion cycle is inversely associated with the accounting and economic measures of performance. Adding on, when endogeneity problem is controlled, only cash conversion had a relation with ROA. This notwithstanding, inflation and GDP variables exhibits a significantly positive link with ROA, GDP loses its significant when associated with economic measure of performance. Lastly, the study further revealed that macro-specific variables do not moderate the inverse relation with accounting and economic measures of performance.

Doruk and Ergün (2019) examined the impact of external factors on cash conversion cycle using 13 Turkish firms for a thirteen year period starting from 2005 and employed GMM methodology. The authors reported that leverage had a non-linear link with cash conversion cycle, growth opportunities had a negatively significant link. On the external perspective, inflation and GDP had a linearly positive link with cash conversion cycle.

2.3.2 Studies from African Countries

Moussa (2019) examined the factors influencing working capital behaviour of sixty-eight Egyptian quoted firms using panel data analysis for an eleven-year period with the commencement year at 2000. The findings reveal that cash flow, growth opportunities and firm age are significantly negative with working capital behavior whereas firm performance, firm value, debt ratio, GDP are significantly positive with working capital behaviour.

Akinlo (2012) investigated the "determinants of working capital requirements in selected quoted companies in Nigeria" with a sample size of 66 Nigerian listed firms for an eight-year period ending in 2007. The findings reveal that whilst leverage and GDP were negatively significant to working capital requirement, cash flow, size and growth opportunities were positively significant to working capital requirement.

2.3.3 Studies from Ghana

Nyeadi, Awudu and Aawaar (2018) examined the forces that impact the working capital management of 28 Ghanaian listed firms for an eight-year period starting from 2007. The findings reported include profitability, age, and operating cycles as having a positive influence on working capital whereas sales growth, GDP growth and leverage are negatively related with working capital.

Akoto, Awunyo-Vitor and Angmor (2013) investigated WCM-profitability of 13 quoted Ghanaian manufacturing firms for a five-year period spanning from 2005. The researchers documented that cash conversion cycle, current asset ratio, size and current asset turnover are significant and positive in their relation with profitability.

Fiador (2016) investigated the essence of CG on working capital management efficiency of thirteen non-financial Ghanaian firms using pooled OLS regression. The results indicated that board size and board composition have a negatively significant impact on working capital management components. Also, firm size is significantly positive to working capital efficiency. Profitability has a negatively significant impact on cash conversion cycle. However, firm age and CEO duality showed a non-linear relation with working capital efficiency.

2.3.4 Working Capital Management

Johnson and Soenen (2003) opine that how fast liquid assets are converted to cash depends on the management of debtors and creditors, working capital management exerts influence on a firm's ability to make profits and have enough liquid assets. For this purpose of this research working capital management is measure as cash conversion cycle (Gitman, 1974; Lyngstaddas and Berg, 2016; Soukhakian and Khodakarami, 2019). The cash conversion cycle-performance link is mixed. When accounting-based indicators such as ROA are used as performance proxy, the findings are biased towards a negative relation (Yazdanfar and Ohman, 2014; Afrifa and Tingbani, 2018, Soukhakian and Khodakarami, 2019; Azami and Tabar, 2016; Uyar, 2009; Valipour et al, 2012; Zariyawati et al, 2016; Thakur, 2005). Documenting a contrary result are just a few (Lyngstaddas and Berg, 2016; Gill et al, 2010; Salehi et al, 2018; Nyeadi et al, 2018; Goel and Sharma, 2015). It should be noted that the performance considered in this relation is accounting-oriented measures. However, it should be noted that other scholars have documented an insignificant relation (Jakpar et al 2017; Gill and Berger, 2013) Informed by this finding, the researcher hypothesize a negative relation with WCM-ROA.

Taking a different perspective of a business entity can be influenced by the actions of the top management team and that is usually an economic-based performance indicator. When focus is given to the classical performance measure which is the accounting-based performance, then answers cannot be provided for how working capital management impact on firm value? Based on this, pools of researchers have made strong reservations for economic-oriented performance to affect working capital management (Gitman et al, 2010; Stewart, 1994; Stephen and Bartunek, 1997; Soukhakian and Khodakarami, 2019). Economic value added takes into account profit after tax and cost of capital. To establish a relationship economic value has been refined and adopted in line with Soukhakian and Khodakarami (2019). Evidence on the relationship between REVA and CCC is tilted towards having a negative relation (Soukhakian and Khodakarami, 2019; Stephen and Bartunek, 1997; Cooper et al, 1998). Drawing on this, the researcher hypothesizes a negative relation. Hence, the first hypotheses as well as the variations are;

H1. Cash conversion cycle is negatively associated with ROA.

H2 Cash conversion cycle is negatively associated with REVA.

2.3.5 External Factors

Extensive research using different measures and methodology have examined the impact of these determinants on the performance of business entities using both accounting and economic oriented indicators. Inflation is one of the most commonly used external factors. Abaidoo and Kwenin (2013), Fama (1981), Enqvist et al (2014) and Issah and Antwi (2017) have reported that inflation significantly impact on performance indicators (either accounting or economic-oriented performance indicators). Other scholars have reported an insignificant yet a positive impact on performance (Doruk and Ergün, 2019; Eldomiaty, Anwar, and Ayman, 2018; Soukhakian and Khodakarami, 2019). Notwithstanding this, Golverdi and Mehrabanpour (2017) report a negative impact on performance. Drawing from this evidence, the researcher hypothesizes a significant relation between inflation and ROA.

Looking at the other aspect of performance, (i.e, REVA) evidence reported is not consistent. Whilst Keminshky (2003) reports a negatively significant relationship, Ramadan (2016) reports a positively significant relationship. Yet, Soukhakian and Khodakarami (2019) reports an insignificant relationship. Drawing strength from this evidence, the researcher propose a significant relationship between REVA and inflation. Positing the second hypothesis and its variation;

H3 *Inflation is significantly associated with ROA.*

H4 *Inflation is significantly associated with REVA.*

2.3.6 Gross Domestic Product

Gross Domestic Product has dominated literature as one of the external factors used in link with performance measures. Scholars such as Baños-Caballero et al (2012), Deloof (2003) García-Teruel and Martinez-Solano (2007), Soukhakian and Khodakarami (2019), Lyngstadaas and Berg (2016), Pais and Gama (2015), Ramadan (2016) have reported a positively significant relation between GDP-ROA in prior literature. The explanation given for such a relation has been that when there is a favourable market value of goods and services it corresponds to a positive effect in performance. However, a handful of research reported a negatively significant link (Al-Homaidi et al, 2018; Bucevska & Misheva, 2017). Having a contrary view is the report of Doruk and Ergün, (2019) who reports an insignificant relation. Based on the reviewed literature, the researcher posits a positively significant relation between GDP-ROA and similarly relation with GDP-REVA.

H5 *GDP is positively associated with ROA.*

H6 *GDP is positively associated with REVA.*

2.3.7 Exchange Rate

Exchange rate reflects a country's denomination equivalent in a different countries denomination. Similarly, the evidence reported between the relations evident in exchange rate and ROA are mixed.

Garcia and Trindale (2018) and Soana (2016) highlight a positively significant link whereas Al-Homaidi et al (2018) reported a contrary evidence of a negatively significant association. Drawing from this literature, the researcher posits a significant association between performance measures.

H7 Exchange rate is significantly associated with ROA.

H8 Exchange rate is significantly associated with REVA.

2.3.8 Moderating Effects of External Drivers

External drivers influencing a business entity are key in short-run financing as well as strategies. When an economy is in recess, it impacts business entities strategies (Ali and Khan, 2011). In times of inflation, the nature of working capital changes rapidly, necessitating a reply with key policies for smoothing. Whilst others are reporting a positively significant relation between inflation and cash conversion cycle (Zariyawati et al, 2016; Eldomiaty et al, 2018; Golvardi and Mehrabanpour, 2017), others have a reported a negatively significant relation (Deloof, 2003; Enqvist et al, 2014).Yet other scholars have established an insignificant relation which deviates from the other two schools (Yenice, 2015; Doruk and Ergün, 2019; Soukhakian and Khodakarami, 2019). Stemming from the dominance in literature exhibiting a positive association between inflation and cash conversion cycle, this research hypothesize that inflation is positively associated with cash conversion cycle.

In the general sense, prior research has reported a positively linear relation between GDP and cash conversion cycle (Garcia-Teruel and Martinez-Solano, 2013; Zariyawati et al, 2010; Moussa; 2019; Doruk and Ergün, 2019)

Other scholars have opposed this view and documented an inversely linear relation between GDP and cash conversion cycle (Mansoori and Muhammed, 2012; Azami and Tabar, 2016; Akinlo, 2012). Others have brought a fresh perspective to this association and documented an insignificant relation (Nyeadi, Sare and Aawaar, 2018; Yenice, 2015; Abbadi and Abbadi, 2013; Soukhakian and Khodakarami, 2019). Standing on the shoulders of this findings, this research hypothesize that GDP moderates the negatively significant relation amidst WCM-performance.

Based on the reviewed literature by the researcher Doruk and Ergün (2019) is the only scholar who have investigated exchange rate effects on cash conversion cycle. The authors document a positively significant relationship. With this evidence, this research posits that exchange rate negatively affect cash conversion cycle.

.H9. Inflation rate lessen the inverse impact of CCC on ROA.

H10. Inflation rate lessen the inverse impact of CCC on REVA.

H11. GDP moderates the inverse impact of CCC on ROA.

H12 GDP moderates the inverse impact of CCC on REVA.

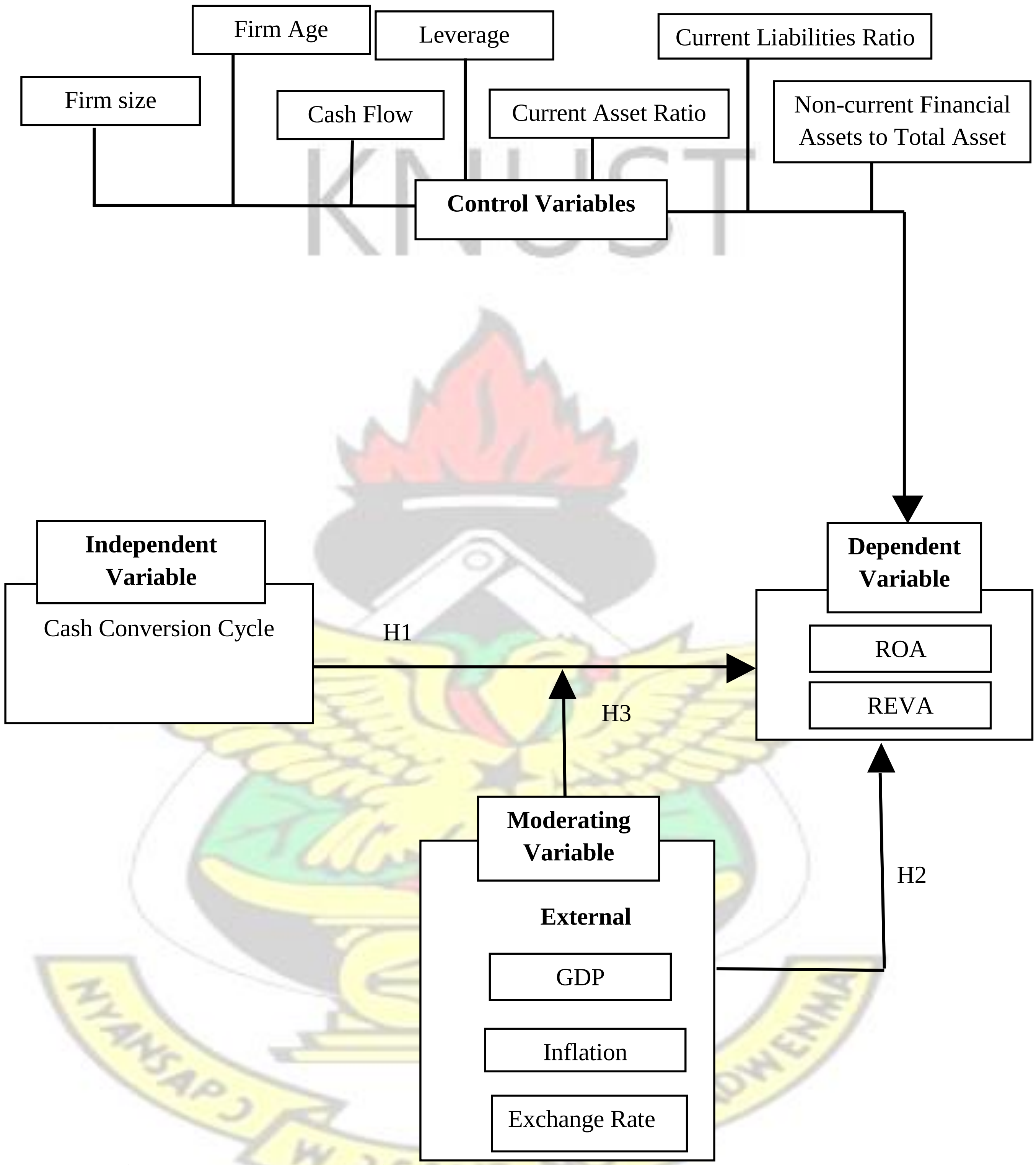
H13. Exchange rate weakens the inverse impact of CCC on ROA.

H14 Exchange rate weakens the inverse impact of CCC on REVA.

2.4 Conceptual framework

The conceptual framework is presented in Figure 2.1

Figure 2.1 Conceptual Framework



Source: Author's own construct (2020)

H1: Cash conversion affects firms' performance
H2: Macroeconomic indicators affect firm performance
H3: Macroeconomic indicators moderate the relationship between cash conversion and firm performance

2.5 Summary of Literature Review

Table 2.1: Literature review summary

Study	**Firms & Sample**	**Independent Variables (Results In Parentheses)**	**Dependent Variable**	**Theory Applied**
Soukhakian and Khodakarami (2019)	111 Iranian firms covering 2010-2017	ROA (-), REVA (-), GDP, Inflation (+),	Cash conversion cycle	Agency Theory
Doruk and Ergün (2019)	13 Turkish firms covering 2005-2017	Leverage (0), growth opportunities (-), inflation(+), GDP (+), Exchange rate (+)	Cash conversion cycle	-
Moussa (2019)	68 quoted Egyptian firms covering 2000-2010	Cash flow(-), growth opportunities(-), size (0), leverage(+), GDP (+), ROA(+) , age(-)	Cash conversion cycle	-
Salehi et al (2019)	91 quoted Iranian firms over 2009-2016	Leverage (+), ROA (+)	Cash conversion cycle	Agency Theory
Gill & Berger (2013)	180 America manufacturing firms covering 2009-2011	CEO tenure (0), CEO duality(0), Board Size (-), Audit Committee (0), firm size (0), ROA (0)	Cash conversion cycle	Tradeoff theory, Pecking order Theory, Free cash flow theory
Fiador (2016)	13 quoted non-financial Ghanaian firms covering 2001-2012	Board composition (-), board size (-), CEO duality (0), ROA, firm age (0), firm size (+)	Cash conversion cycle	Agency Theory

Abbadi & Abbadi (2013)	11 quoted companies in Palestine covering 2004-2011	Leverage (-), firm size (-), ROA (+) , Cash flow (+)	Cash conversion cycle	Pecking Order Theory
Azami &Tabar (2016)	143 quoted Iranian firms	Firm value (+), leverage (-), ROA (-), GDP (-)	Cash conversion cycle	-
Akinlo (2012)	66 quoted Nigerian firms	Leverage (-), GDP (-), cash flow (+), size (+), growth opportunities (+)	Cash conversion cycle	Contingency Theory
Chauhan & Banerjee (2018)	17,161 Indian unquoted institutions covering 1994-2015	Firm size (+), cash flow (-), growth opportunities (-), leverage (-)	Cash conversion cycle	Capital Structure Irrelevance, Trade-off theory, Pecking order theory
Nyeadi, Awudu and Aawaar (2018)	28 Ghanaian listed firms covering 2007-2015	Profitability (+), age (+), operating cycles (+), sales growth (-), GDP growth (-) and leverage (-), GDP (0)	Working capital requirements	Agency Theory, Pecking order Theory
Goel & Sharma (2015)	1,200 quoted Indian firms spanning from 2004-2013	profitability (-) and growth opportunities (-)	Cash conversion cycle	-
Haron and Norman (2016)	57 quoted firms in Malaysia spanning 2002-2012	Cash flow (+), ROA (-), growth opportunities (-)	Cash conversion cycle	Agency Theory
Baños-Caballero et al. (2010)	4076 Spanish SMEs	Cash flows (+), age (+), leverage (-), growth opportunities (-), ROA(-)	Cash conversion cycle	Capital Structure Irrelevance, Pecking order theory

+, denotes Positive; - denotes Negative; 0 denotes Insignificant

Source: Author’s own construct (2020)

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This branch of the research has been structured into six main themes. The introductory theme addresses the research design. Data selection and sampling technique is explored in the next theme following the introductory theme. The third theme explores the methodology adopted. The next theme addresses the model specification, diagnostic testing and robustness testing. The penultimate theme illustrates the variables, descriptions and measurements. Ultimately, the last theme summarizes this branch of the research.

3.1 Research design

The research approach adopted for this research is the quantitative research approach since this research seeks to examine the moderating role of external drivers on the WCM-performance relation of non-financial Ghanaian firms. Again, this approach has been adopted and draws strength of its applicability on the prediction the level of link amidst variants (Malhotra and Birks, 2007). This research is combination of descriptive and exploratory research. Yin (2003) and Sauders and Thornhill (2009) lays a strong argument for this combination when a researcher seeks to find answers to what, why, how and whom. Case study strategy has been employed as the research strategy design. This strategy draws strength from the fact that it is best suited when there is an examination or the introduction of new variables in links, which hitherto where not exploited extensively (Yin 1999, McCutheon and Meredith, 1993).

3.2 Data Selection and Sampling Technique

The population for this research is all non-financial firms listed on the Ghana Stock Exchange of which 16 constitute the sample size. A sample is a part of a whole and the procedure for drawing a sample out of a whole is termed sampling. In enhancing the reliability of the findings, internal factors information of firm has been retrieved from audited financial statements from the Ghana Stock Exchange from 2009 to 2018 whereas the external factors data were retrieved from the World bank database. The data covers a ten-year period from 2009-2018.

The study uses a panel data. Brooks (2014) assert that panel data methodology is employed, if the research comprises of either cross-sectional, time-series and/or a combination of both. With respect to this research, the sampled firms are held constant and measured over time. Hsiao (2003) and Baltagi (2005) opine the use of panel data methodology to remove unobserved heterogeneity which may occur by the differences in firms. Also, it exposes dynamics which hitherto is tiring to examine (Dougherty, 2011). For the purpose of this research pooled ordinary least square estimation is used to analyze the data covering 2009-2018 using Stata version 15.0.

Purposive sampling technique has been employed to select the sample based on filters. The relevance of this technique lies in the autonomy it affords the researcher to select firms based on the criteria that meets the requirement of the study and the convenience this method affords. Hence, the following criteria were applied before selection was done; the company should be solvent and still in operation throughout the ten-year period, not passive on the stock market within the time period and must have adequate information available.

The sampled non-financial firms are; Aluwork Ltd, AngloGold Ashanti Ltd, Benso-Oil Palm ltd, Camelot Ghana ltd, Clydestone Ghana Ltd, Cocoa Processing company ltd, Fan milk ltd, Goil ltd, Golden Star Resources ltd, Guinness Ghana Brewery Ltd, Mechanical-Lloyd ltd, PZ-Cussons ltd, Sam Woode ltd, Total Petroleum ltd, Tullow oil ltd and Unilever Ghana Ltd.

3.3 Model Specification

Soukhakian and Khodakarami (2019) model has been adopted and used. The general model is outlined below;

$$ROA_{i.t} = CCC_{i.t} + Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \sum \theta_k Year + \varepsilon_{i.t} \quad \dots\dots\dots\dots\dots (1)$$

$$REVA_{i.t} = CCC_{i.t} + Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \sum \theta_k Year + \varepsilon_{i.t} \ldots \ldots (2)$$

$$ROA_{i.t} = I_{i.t} + Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (3)$$

$$REVA_{i.t} = I_{i.t} + Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots \ldots \ldots (4)$$

$$ROA_{i.t} = GDP_{i.t} + Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (5)$$

$$REVA_{i.t} = GDP_{i.t} + Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots \ldots \ldots \ldots \ldots (6)$$

$$ROA_{i.t} = Exch_{i.t} + Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots (7)$$

$$REVA_{i.t} = Exch_{.t} + Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots \ldots \ldots \ldots \ldots (8)$$

$$ROA_{i.t} = CCC_{i.t} + I_{i.t} + I_{i.t} * Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots (9)$$

$$REVA_{i.t} = CCC_{i.t} + I_{i.t} + I_{i.t} * Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots (10)$$

$$ROA_{i.t} = CCC_{i.t} + GDP_{i.t} + GDP_{i.t} * Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots \ldots \ldots \ldots \ldots (11)$$

$$REVA_{i.t} = CCC_{i.t} + GDP_{i.t} + GDP_{i.t} * Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots (12)$$

$$ROA_{i.t} = CCC_{i.t} + Exch_{i.t} + Exch_{i.t} * Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots \ldots \ldots \ldots \ldots (13)$$

$$REVA_{i.t} = CCC_{i.t} + Exch_{i.t} + Exch_{i.t} * Ctrl\ var_{i.t} + \sum y_J \mathrm{IND} + \varepsilon_{i.t} \ldots \ldots (14)$$

Where, ROA is Return on Assets, REVA represents Refined Economic Value Added, CCC denotes Cash Conversion cycle, I is inflation, Exch represents exchange rate Ctrl var represents control variables (ε) and error term represent the variation of the dependent variable that are not measured by the exogenous variable in the model.

3.4 Estimation Technique

Secondary data collected were analysed with the aid of a statistical instrument called STATA. Data were analysed descriptively. Descriptive statistics was used to present and organize data. The Panel Regression Method was used in the analysis of the data. The rationale for using the panel regression method was to ensure that the residual of all the variables are weighted equally across board so as to reduce the standard errors in the regression model. OLS regression estimate was tested as well as its assumptionsSeries of tests were conducted to enhance the reliability of the findings. Some of which are stationarity test to ensure that all the variables were stationary at level. Multicollinearity test using Pearson correlation coefficient was also conducted to make sure that none of the variables was perfectly correlated. All the tests of significance are measured across various significant level. Thus 1%,5% and 10% with asterisk given as follows ***, **, * respectively.

3.4.1 Diagnostics Testing

For improvement in the result as well as avoid omission correlation bias, a few control variables were included. In order to ensure reliability of the results, variance inflation factor analysis has been used to remove multicolinearity issues.

3.4.2 Robustness Testing

To ensure robustness of the results of this research, various firm-level factors have been used to control for time-varying firm factors that could possibly affect the performance (accounting and economic-oriented performance). Prior literature such as Deloof (2003), Pais and Gama

(2015) and Soukhakian and Khodakarami (2019) assert that there is evidence of endogeneity when the association amidst working capital management-performance are investigated. To control this phenomenon, 2SL with robust standard errors has been performed.

3.5 Variables. Descriptions and Measurements

The table below gives the variable construction and proxies with their expected signs and has been adopted from Baseri et al (2013), Pais and Gama (2015) and Soukhakian and Khodakarami (2019) measurement for the respective variables and has been summarized in Table 3.1.

Table 3.1 Measurement of variables

Variable	Notation	Proxy	Expected Sign
Dependent Variable			
Return on Assets	ROA	Net income expressed over total assets	
Refined Economic Value Added	REVA	Operating income after taxes deducted from the weighted cost of capital	
Independent Variable	CCC	Account receivable days plus inventory days less account payable days.	-
Cash Conversion Cycle			
Moderating Variable	I	Consumer price index	+
Inflation			
GDP	GDP	Real GDP growth rate	+
Exchange Rate	Exch	Annual exchange rate	+
Control Variables		Natural logarithm of total assets	+
Firm Size			
Current Asset Ratio	CAR	Current asset over total assets	+/-
Current Liabilities Ratio	CLR	Ratio of current liabilities to total liabilities	+
Firm Age	A	Natural logarithm of number of years since the firm's establishment	+
Leverage	L	Ratio of total debt to total assets	+
Cash Flow	CF	Operating cash flow over total sales	+
Fixed Financial Assets	FFA	Ratio of fixed financial assets to total assets	+

3.6 Summary of Chapter

This branch provides a comprehensive description of how the data was obtained, categorised and sampled. It also explains the different variables used in this research as well as their corresponding measurement methods. The chapter also provides a detailed description of the panel regression method which includes the fixed effect model. It concludes by specifying the models employed in this research and the measurement of the variables. The next branch presents the results obtained from the analyses.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION OF FINDINGS

4.0 Introduction

Across several studies, the definition of performance differs. However, in line with preceding studies as reviewed in Chapter two, the study relies on ROA, and REVA. The selected macroeconomic variables include rate of inflation, GDP, and Exchange Rate.

4.1 Descriptive statistics

Table 4.1 presents a wide variety of data with respect to the study variables. With reference to the performance indicator REVA, there is a significant dispersion as shown in the minimum, maximum as well as standard deviation scores. From the sampled firms in the study, the average REVA is -1475.1 with an amount that ranges from -21636451.3 to 10423055.5.

Concerning the other performance indicator, ROA, the minimum value of ROA is -0.99 and a maximum value of 0.56. The lower standard deviation of 0.15 indicates the values closer to the mean values.

With reference to the macroeconomic indicators, the minimum value is 7.4 and a maximum value of 19.3. The standard deviation of 3.48 is the highest among the macroeconomic variables.

The standard deviation of 3.22 for GDP is the next higher among the macroeconomic variables. The minimum and maximum values for GDP are 3.5 and 15 respectively. The mean value for GDP is 6.8.

Concerning exchange rate, the selected firms show a mean value of 0.42 with a standard deviation of 0.2 an indication that data sets analyses are closer to average. The minimum value for exchange rate is 0.15 and a maximum value of 0.68.

Table 4.1: Descriptive Statistics

Variables	Min.	Max.	Mean/Average	Median	Standard Deviation
REVA	-21636451.3	10423055.5	-1475.1	-106278.7	1936259.6
ROA	-0.99	0.56	0.03	0.02	0.15
ARD	1.88	403.77	39.75	61.15	66.3
ID	0	601.3	72.77	95.95	91.51
APD	9.67	3489.4	118.5	229.2	416.8
CCC	-2763.5	770.8	-0.39	-72.05	397.5
CLR	-0.23	1	0.89153	0.74	0.29
CAR	0.06	0.96	0.45	0.44	0.22
LEV	0.03	1.6	0.66	0.65	0.28
A	0	1.43	1.14	1.07	0.32
L	-5.3	9.4	1.02	1.26	1.36
Inf	7.4	19.3	11.05	12.02	3.48
GDP	3.5	15	6.8	6.93	3.22
EXCH	0.15	0.68	0.68	0.42	0.20

Source: Field Survey, 2020

4.2 Relationship between Cash Conversion Cycle and Firm Performance of Listed Firms

This subsection of the chapter provides data for the analysis of the first research objective which is to examine the relationship between cash conversion cycle and firm performance of listed firms.

Table 4.2 presents the Pearson correlation of the study variables. To obtain reliable data among the study variables, the study tested the existence of a collinearity problem. Table 4.2 shows no collinearity problem among the independent variables, which is in line with Kennedy (2008) that multicollinearity is regarded a problem with an above 0.80 correlation.

The study analyses the data to test the first hypothesis of the study. As shown in Table 4.2, CCC is positively correlated with ROA. This finding is insignificant and is in line with previous study by Sharma and Kumar (2011) whose analysis found no significant relationship between CCC and ROA. The finding does not support the first hypothesis of the study that CCC is negatively associated with ROA.

With the focus on CCC, the result in Table 4.2 shows a negative correlation between CCC and REVA. This relationship is not significant. This finding follows the earlier conclusion by Lyngstadaas and Berg (2016) who found no significant correlation between CCC and REVA. This finding also supports the second hypothesis of the study which states that CCC is negatively correlated with REVA.

Table 4.2: Correlation matrix for firm performance

	REVA	*ROA*	*ARD*	*ID*	*APD*	*CCC*	*CLR*	*CAR*	*FS*
REVA	1								
ROA	-0.0074218	1							
ARD	0.04065825	-0.0410371	1						
ID	0.02073161	-0.1730261	0.51695112	1					
APD	0.02052695	-0.2045276	0.38529156	0.1757329	1				
CCC	-0.0099659	0.1677461	-0.1181334	0.13217772	-0.9436441	1			
CLR	0.10385161	0.29841204	0.05878186	-0.1054617	-0.0514709	0.0394893	1		
CAR	0.01870875	0.18243594	0.08632183	0.0092786	-0.2014728	0.22775021	0.64448991	1	
FS	-0.0921401	0.06824012	-0.3677133	-0.2621337	-0.1829023	0.07007515	0.02642463	0.02909762	1
CF	-0.0246612	0.14994385	-0.2204649	-0.3557488	-0.0054041	-0.1129949	-0.3149303	-0.2351867	-0.0798023
LEV	0.05049574	-0.3867244	0.2922754	-0.0056866	0.46509187	-0.4401421	-0.1113142	-0.0336826	-0.12764
A	0.16300981	0.18598921	-0.0668825	0.03983805	-0.0619444	0.06295427	0.37112186	0.25542098	0.27136826
L	-0.0473017	0.28149491	-0.1625558	-0.0332623	-0.2034996	0.17857061	0.17553267	0.09631001	0.02541953
Inf	0.06056082	-0.0894573	0.05484611	0.0608058	-0.0111111	0.03479305	-0.0050561	-0.0058149	-0.0281539
GDP	-0.0272716	0.09069125	-0.0473418	0.08782048	-0.0913267	0.10806153	0.0323387	0.0404795	-0.0532108
EXCH	0.0554149	-0.0842679	-0.0264098	-0.2073531	0.16650061	-0.2266869	-0.0264225	-0.1235165	0.1732767

Con't Table 4.2: Correlation matrix for firm performance

	CF	***LEV***	***A***	***L***	***Inf***	***GDP***	***EXCH***
CF	*1*						
LEV	-0.0791978	1					
A	-0.3699836	-0.0336053	1				
L	0.12099567	-0.5478734	-0.0781657	1			
INF	-0.0265818	-0.0288479	-0.0869031	0.01823022	1		
GDP	0.00779715	-0.1271773	-0.1147814	0.03535394	-0.4713338	1	
EXCH	-0.037749	0.18435242	0.38067671	-0.0599904	-0.0711363	-0.451444	1

Source: Field Survey, 2020

4.3 The Relation Evident in Macroeconomic Indicators and Performance of Listed Firms in Ghana.

This subsection of the chapter provides data for the analysis of the second research objective which is to assess the relation evident in macroeconomic indicators and performance of listed firms in Ghana. The macroeconomic variables of interest are inflation, GDP and Exchange rate. With reference to inflation, the data in Table 4.3 there is a negative coefficient (-2.44) on ROA. This implies that inflation is negatively related to ROA. This is significant at 1% significance level. This is an indication that, on average, when firms reduce the trade credit they offer for sales, lower proportions of their inventory is tied up with bill payment stretched out and is then able to arrive at higher profitability. This finding contradicts the theory that expenditures increase during inflationary periods. However, to an extent this study is in line with previous study by Kamisnky et al. (2013). The finding supports the third hypothesis that inflation is significantly related to ROA.

On the relationship between inflation and REVA, the results in Table 4.3 indicate a negative coefficient between inflation and REVA. However, this relationship is insignificant. This finding contradicts the study by Soukhakian and Khodakarami (2019). This finding does not support the fourth hypothesis that Inflation is significantly associated with REVA.

Concerning GDP, the study found a positive significant effect of GDP on ROA [Coefficient= 2.61]. This implies that GDP is positively related to ROA. This is significant at 1% significance level. This finding is indicated by the correlation matrix in Table 4.2. This finding of a positive effect is in line with previous studies by Deloof (2013) and Banos-Caballero et al. (2012). The indication is that firms take advantage of favourable economic conditions to improve their profitability. This finding supports the fifth hypothesis that GDP is positively associated with ROA.

Concerning the effect of GDP on REVA, the study results show no significant effect of GDP on REVA. Although the coefficient is positive, it is not significant. The study results therefore do not support the sixth hypothesis of the study. The several conflicting effects between the two variables likely explain the insignificance of the relationship.

Concerning exchange rate, the study data in table 4.3 depicts a negative coefficient (-1.7) at a significance level of 1%. This significant relationship supports the seventh hypothesis that exchange rate is significantly associated with ROA.

With regards to the effects of exchange rate on REVA, the study findings reveal a negative relationship. However, this relationship is not significant. Consequently, the study data does not support the eight hypothesis that exchange rate is significantly associated with REVA.

Table 4.3 Regression results for macroeconomic variables

	ROA		REVA	
	Coefficient	**Prob**	**Coefficient**	**Prob**
CCC	-4.02	0.05*	-2.3	0.00**
CLR	-1.26	0.21	-0.65	0.14
CAR	-2.23	0.05*	0.13	0.11
FS	-1.95	0.65	-0.44	0.33
CF	-4.11	0.00**	-1.32	0.56
LEV	-7.3	0.00**	-2.3	0.00**
A	-0.14	0.00**	-0.3	0.44
L	0.12	0.41	0.4	0.36
Inf	-2.44	0.00**	-0.18	0.28
GDP	2.61	0.00**	0.54	0.32
EXCH	-1.7	0.00**	-1.22	0.41

**= 1% significance level *= 5% significance level

4.4 Moderation Effects of Macroeconomic Indicators

This subsection of the chapter provides data for the analysis of the second research objective which is to investigate how macroeconomic indicators moderate the relation that cash conversion cycle has on performance.

This subsection discusses the results of the moderating effects of inflation, GDP and exchange rate on the influence conversion cycle has on ROA. ROA is the proxy for performance. Concerning inflation, the study results depict a positive coefficient at significance level of 1%. This finding supports earlier study by Ramadan (2016) who explored the impact of macroeconomic variables among manufacturing firms in Jordan. This finding does not support the ninth hypothesis of the study.

As shown in the table 4.4, the GDP coefficient shows a statistically significant impact at 1% significant level. Thus, GDP has a positive influence in the relationship between CCC and ROA. This finding supports earlier study by Enqvist et al. (2014) who explored firm profitability in Finland. The finding supports the eleventh hypothesis of the study.

Concerning exchange rate, the study data in table 4.4 depicts a positive coefficient (0.56) at a significance level of 5%. This finding supports earlier study by Makori and Jagongo (2013) who studies firm profitability in Kenya. The finding does not support the thirteenth hypothesis of the study.

Table 4.4 Moderating effect of macroeconomic indicators on the CCC and ROA Relationship

Regressor	**Coefficient**	**Standard Error**	**T statistic**
Constant	-32.43	8.055	-3.13**
inflation	3.67	1.895	3.66**
GDP	4.24	1.465	3.01**
Exchange Rate	0.56	0.432	2.12*

**= 1% significance level *= 5% significance level

On the moderating effect of macroeconomic indicators on the CCC and REVA, the study results as shown in Table 4.5 indicate a negative coefficient. However, this influence is not significant. This finding contradicts the study by Zaher and Illescas (2020) on CCC and firm profitability. The finding does not support the tenth hypothesis of the study.

With reference to the moderating effect of GDP, the coefficient indicates a negative effect. However, this effect is insignificant on the CCC and REVA Relationship. This finding is in line with previous study by Mansoori and Muhammad (2012) in Singapore. This finding does not support the twelfth hypothesis of the study.

Concerning the moderating effect of exchange rate, the study found a negative coefficient of -0.125. This is significant at 5% level of significance. This finding supports earlier study by Wang and Li (2015) who studied profitability under competitive strategies. This finding supports the fourteenth hypothesis of the study.

Table 4.5 Moderating effect of macroeconomic indicators on the CCC and REVA Relationship

Regressor	**Coefficient**	**Standard Error**	**T statistic**
Constant	-0.01	0.12	-1.33*
Inf	-0.00	0.03	-1.07
GDP	-0.00	0.00	-0.14
EXCH	-0.125	0.07	-1.17*

*= 5% significance level

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

Working Capital Management is a CM is a significant tool that aids in the functioning of firms as it is relevant to the corporations balancing their current assets as well as liabilities. The chapter discusses the summary of findings, recommendations and suggestions for further studies.

5.1 Summary of findings

Working capital management as an approach provides a firm the ability to bring into harmony the amount of cash locked up in debtors and stocks with payments to creditors. In the last two decades, literatures within financial management have sought to investigate the relation between working capital management and performance. Within the context of Ghana, the moderating role of macroeconomic indicators on the relation between working capital management and performance has received less attention.

The study sought to fill this gap in literature by following the call of Soukhakian and Khodakarami, (2019) and Lefbvre (2020), firstly, to extend the study to other developing countries – Ghana- as well as adding another macroeconomic variable (exchange rate). The objectives of the study were to; examine the relationship between cash conversion cycle and firm performance of listed firms; assess the relation evident in macroeconomic indicators and performance of listed firms in Ghana; as well as to investigate how macroeconomic indicators moderate the relation that cash conversion cycle has on performance.

Samples of 18 firms were drawn out of the 37 listed firms on the Ghana Stock Exchange. The sampling technique adopted was the purposive sampling. Additionally, information concerning the macroeconomic indicators used for this research was obtained from the World Bank database.

Within the context of Ghana, the studies is an interesting and anew step towards understanding the moderating effects of macroeconomic variables (exchange rate inclusive) in the WCM and firm performance relationship. The significant correlation between COA and ROA supports the popular theorization of the risk-rewards nature of decision making in finance and the earlier study by Yazdanfar and Ohman (2014) which favours the adoption of an aggressive strategy leads to accounting-based performance.

With reference to inflation, the study found a significant negative effect on ROA. On the relationship between inflation and REVA, the results found a negative coefficient between inflation and ROA. However, this relationship was insignificant. The significant correlation between COA and ROA supports the popular theorization of the risk-rewards nature of decision making in finance and the earlier study by Yazdanfar and Ohman (2014) which favours the adoption of an aggressive strategy leads to accounting-based performance.

Concerning GDP, the study found a positive significant effect of GDP on ROA. This finding is indicated by the correlation matrix employed. The finding of a positive effect is in line with previous studies by Deloof (2013) and Banos-Caballero et al. (2012). With reference to the effect of GDP on REVA, the study results show no significant effect of GDP on REVA. The several conflicting effects between the two variables likely explain the insignificance of the relationship.

On exchange rate, the study data depicts a negative coefficient at a significance level of 1%. With regards to the effects of exchange rate on REVA, the study findings reveal a negative relationship. However, this relationship was not significant.

The moderating roles of macroeconomic indicators are also analyzed. Concerning inflation, the study results depict a moderating effect of CCC on ROA. The study results also show a moderating effect of GDP and exchange rate on the relationship between CCC and ROA.

5.2 Conclusion

This study investigated the moderating role of macroeconomic indicators on working capital management and performance of listed firms in Ghana. The macroeconomic indicators of concern were inflation, GDP and exchange rate. As presented in the earlier chapter, CCC is positively correlated with ROA. This finding is insignificant and is in line with previous study by Sharma and Kumar (2011) whose analysis found no significant relationship between CCC and ROA. The study also found significant effects of inflation, GDP and exchange rates on ROA. The effects of the macroeconomic variables on REVA were largely insignificant.

The study results come with theoretical as well as practical implications. In theory, the study examines the moderating role of macroeconomic indicators on working capital management and performance of listed firms in Ghana. This enhances the literature on WCM and providing opportunity for future studies. Prospective studies can explore the other moderating effects on firm performance. Practically, the study offers information for mangers o the relevance of economic indicators and how to respond appropriately.

5.3 Recommendation

The study results and analyses support earlier findings on macroeconomic factors impact firm performance. Also, the study results about negative relationship between economic indicators and REVA underlie the influence of inflation on capital structure as well as capital cost which in the long run has an impact on performance. Based on this, the study recommends that managers monitor closely the changes to economic conditions as the economic conditions such as GDP has significant effect on firm performance.

5.4 Areas for Further Research

The study was limited to selected Ghanaian firms. Further research should be carried out to include other countries in sub Saharan Africa so as to test the replicability of the findings of this research.

Furthermore, future studies can expand the variables included in the moderating roles so as to expand the literature on WCM and firm performance.

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