



BOURNEMOUTH UNIVERSITY

WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF UK FIRMS: A CONTINGENCY THEORY APPROACH

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ABSTRACT

While the direct impact of working capital management (WCM) and its components (accounts receivable in days (AR), accounts payable in days (AP) and inventory holding period (INV)) on firms' profitability has been examined in the previous literature, the underlying channels of influence have remained largely unexplored. This study adopts a contingency theory approach to investigate the relationship between WCM and profitability controlling for selected corporate governance and company characteristics. The study has three main objectives. The first objective is to determine the relationship between working capital management and its components (AR, AP and INV) and profitability as per extant research. The second objective of the research is to determine whether the effect of working capital management on profitability of UK firms is contingent on the interaction of environmental (E), resource (R) and management (M) variables. The final objective is to determine whether the effect of the components of working capital management (AR, AP and INV) on profitability of UK firms is contingent on the interaction of ERM variables. These three objectives were met by the use of a panel data methodology on a series of interactive models. The data for the study is based on the annual financial reports of 225 London Stock Exchange listed firms for the period 2001-2011.

In terms of the first objective, the study found a significant relationship between WCM and two of its components (AR and AP) and profitability. However, no relationship was found between WCM component (INV) and profitability. In terms of the second objective, the results indicate that the effect of WCM on profitability is significantly moderated by the interaction with ERM variables of the firm. Finally, the results of the third objective

indicate that the effect of WCM components (AR, AP and INV) on profitability is significantly moderated by the interaction with ERM of the firm.

In terms of the control variables, the study found a statistically significant relationship between the corporate governance factors (Chief Executive Officer (CEO) tenure and board size) and profitability. On the other hand, company specific characteristics variables (company size, financial leverage, assets tangibility liquidity ratio, cash flow and sales growth) were also found to have statistically significant effect on the profitability of firms.

On the basis of this, the study concludes that firms can maximise the benefits and minimise the cost of investment in working capital by aligning their working capital management policies with their environment and also arrange their resources internally to support such alignment as postulated in the contingency framework as any misalignment could significantly affect the firms' performance. As a result, the study suggests the need for policy makers to match organisational resources with opportunities and threats in the general business environment in order to improve their financial performance.

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DECLARATION

This thesis is submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (Finance) at the Bournemouth University, United Kingdom. I declare that this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that this thesis has not been previously or concurrently submitted, either in whole or in part, for any other qualification at the Bournemouth University or other institutions.

Ishmael Tingbani

January 2015

DEDICATION

I dedicate this dissertation to my lovely wife Joyce M Tingbani and son Jaden Samoya Tingbani for their continuous support, encouragement and constant love throughout my life.

LIST OF ABBREVIATIONS AND ACRONYMS

AIC	Akaike Criterion
AMEDEUS	Analyse Major Databases From European Sources
AP	Average Days Payables Period
<i>APERM</i>	Interaction Of Environmental Resource And Management Variables With Account Payables Period
AR	Average Days Receivable Period
<i>ARERM</i>	Interaction Of Environmental Resource And Management Variables With Account Receivable Period
ATAN	Assets Tangibility
BA	Bachelor Of Arts
Bodsize	Board Size
BSE	Bombay Stock Exchange
CA	Current Assets
CL	Current Liabilities
CCC	Cash Conversion Cycle
<i>CMBA</i>	Chartered Banker Master Of Business Administration
<i>CERM</i>	Interaction Of Environmental Resource And Management Variables With Cash Conversion Cycle
CEO	Chief Executive Officer
CFL	Cash Flow
CMRC	Credit Management Research Centre
CR	Liquidity Ratio
<i>DSO</i>	Days Sales Outstanding
E	Environmental Variable
EBIT	Earnings Before Interest And Tax
EU	European Union
<i>EOQ</i>	Economic Order Quantity
<i>FE</i>	Fixed Effects
FIRMSIZE	Company Size

GLS	Generalised Least Square
GMM	Generalized Method Of Moments
I	Industry
INV	Average Inventory Holding Period
INVERM	Interaction Of Environmental Resource And Management Variables With Average Inventory Holding Period
ISE	Istanbul Stock Exchange
IOD	Institute Of Directors
JSE	Japanese Stock Exchange
JIT	Just-In-Time
KSE	Karachi Stock Exchange
LSE	London Stock Exchange
LEV	Financial Leverage
M	Management Variables
MCIB	Member Of Chartered Institute Of Bankers
MBA	Master In Business Administration
NSE	Nairobi Stock Exchange
NYSE	New York Stock Exchange
OBS	Observations
OLS	Ordinary Least Square
OTC	Over-The-Counter
PI	Profitability Index
PHD	Doctor Of Philosophy
POH	Pecking Order Hypothesis
RBV	Resource-Based View
R&D	Research And Development
POT	Pecking Order Theory
R	Resource Variables
RE	Random Effect

ROA	Return On Assets
ROE	Return On Equity
S	Sales
SGRTH	Growth Opportunity
SCP	Structure-Conduct-Performance
SMEs	Small And Medium Enterprises
TA	Total Asset
Tenure	CEO Tenure
TFA	Total Fixed Assets
TD	Total Debt
TO	Turnover
TSE	Tokyo Stock Exchange
UK	United Kingdom
US	United States
USA	United States Of America
WCM	Working Capital Management

CHAPTER ONE

OBJECTIVES AND OVERVIEW OF THE RESEARCH

1.1 INTRODUCTION

Working capital management (WCM) is a significant area of financial management and its administration impacts on the firm's profitability, risk and consequently its value (Deloof, 2003). Firms can choose between the relative benefits of two basic types of strategies for net working capital management: aggressive financing policy where firms minimise their working capital investment with a low level of current assets as a percentage of total assets or alternatively, a conservative financing policy, where it uses more long-term debt and capital and less current liabilities (Afza and Nazir, 2007; Dong and Su, 2010). Under the first view, higher working capital levels allow firms to increase their sales and obtain greater discounts for early payments (Deloof, 2003) which may increase firms' value (Baños-Caballero et al., 2013). For example, if the firm adopts an aggressive WCM policy, a reduction in the investment in working capital will result in minimising the amount of inventory and accounts receivable. Minimising inventory means that storage and insurance costs will be reduced, thus increasing profitability. Keeping accounts receivable to a minimum will also increase profitability as these funds can either earn interest or be invested elsewhere.

With the conservative policy, higher working capital levels need to be financed and, consequently, firms face additional financing expenses that increase their probability of going bankrupt (Kieschnick et al., 2009). The strategy could lead to an increase in the investment in working capital. A conservative working capital management strategy is aimed at stimulating sales through increased inventory levels and trade receivables in order

to increase profitability (Tauringana and Afrifa, 2013). This is because an increase in inventories can prevent production disruptions (Garcia-Teruel and Martinez-Solano, 2007), reduce the risk of stock-out (Deloof, 2003), reduce supply costs and price fluctuations (Blinder and Maccini, 1991). Also an increase in accounts receivable can increase sales as it allows customers time to pay (Long et al., 1993; Deloof and Jegers, 1996), reduce the information asymmetry between the buyer and the seller, and can be an inexpensive source of credit for customers (Peterson and Rajan, 1997; Deloof, 2003). Consequently, firms need to evaluate the trade-off between expected profitability and risk before deciding the optimal level of investment in current assets (Garcia-Teruel and Martinez-Solano, 2007).

Firms can minimise risk and increase profitability by understanding the importance of working capital management. Evidence from Wilson (2008) demonstrates the importance of working capital management to UK firms. The provision of credit among firms in the UK has been a prevalent practice and exists as long as business-to-business trade exists. It is estimated that about 80 per cent of business-to-business transactions are on credit (Wilson, 2008). According to Wilson and Summers (2002), “trade credit in the UK exceeds the primary money supply by an average factor of 1.5 and represents one of the most important forms of financing [exceeding] the business lending of the entire banking system” (Lee and Stowe, 1993, p. 285). According to Manager (2009), £26 billion is currently owed by their customers of British businesses making trade debtors one of the riskiest assets UK firms are likely to have (Paul and Wilson, 2006; Peel et al., 2000; Pike et al., 1998). Given these characteristics, it is perhaps unsurprising that the efficient management of working capital and good credit management practice have been stressed as being pivotal to the health and performance of firms in the UK (Peel et al., 2000). The focus of this study is to contribute to current debate on the relationship between working

capital and profitability among companies listed on the main market of the London Stock Exchange (LSE).

1.2 MOTIVATION AND NEED FOR THE STUDY

The study has the following motivations. First, the focus of current studies has traditionally been on estimating direct relationship between working capital management and profitability without focusing on the interactive impact of internal and external environment in which firms operate. Consequently, the study explores whether the relationship between working capital on profitability may be contingent on the interaction of external and internal characteristics of the firm. It acknowledges the view that working capital management may have an impact on profitability as established by extant studies (Shin and Soenen, 1998; Deloof, 2003; García-Teruel and Martínez-Solano, 2007), but argues that such a relationship may be constrained by environment, resources and management variables, as proposed in the contingency theory framework.

Second, our knowledge and understanding of the working capital management policies among large firms in the UK is currently inadequate in view of the fact that late payment and working capital management has been identified as the primary source of business failures. The few existing studies (Howorth and Westhead, 2003; Tauringana and Afrifa, 2013) that have investigated this area have primarily focused on smaller firms. The reason for this is often associated with the fact that smaller firms lack access to external finance (Whited, 1992; Fazzari and Peterson, 1993; Peterson and Rajan, 1997) and rely heavily on working capital management as a vital source of finance (Padachi, 2006). However according to Deloof (2003), the management of working capital for large firms is equally important since most large firms tend to have a large amount of cash invested in working capital, as well as substantial amounts of short-term payables, as a source of financing.

Third, the conflicting results of the existing literature on the relationship between working capital management and profitability also motivated this study. While some studies suggest a positive relationship (Dong and Su; 2010; Mathuva, 2010) between working capital management variables and profitability, others advocate a negative association (see, Deloof, 2003; García-Teruel and Martínez-Solano, 2007; Falope and Ajilore, 2009). Different researchers also give varying explanation for the direction of the association between WCM and profitability. In the light of this evidence, the study seeks to contribute to existing knowledge on the relationship between working capital management and profitability.

1.3 AIM AND OBJECTIVES OF THE RESEARCH

The main aim of the study is to investigate whether the relationship between WCM and profitability is contingent on the environment, resources and management of the firm. This is consistent with the contingency theoretical framework and other empirical research devoted to the analysis of working capital management and profitability. The aim will be met by the following objectives:

1. To determine whether there is a relationship between aggregate working capital management and its components (accounts receivable in days, accounts payable in days and inventory days) and profitability as per extant research.
2. To determine whether the effect of working capital management on profitability is contingent on the interaction of environmental, resource and management variables of UK firms.
3. To determine whether the effect of the components of working capital management (accounts payables in days, accounts receivables in days, and inventory held in

days) on profitability is contingent on the interaction of environmental, resource and management variables of UK firms.

1.4 SUMMARY OF RESEARCH METHODOLOGY

The data for the study is based on the annual financial reports of 225 London Stock Exchange listed firms for the period 2001-2011. The choice of the sample was guided by two conditions. First, companies must have financial data for the period 2001-2011. This period covers the entire period of the old and new UK late payment of Commercial Debts (Interest) Act 1998, which is from 1st of January 2000 to 31st of December 2011. Second, financial firms such as banks and insurance firms, were excluded due to their different accounting requirements (e.g. Mangena and Taurigan, 2008), financial characteristics and investment in working capital (Falope and Ajilore, 2009). The two criteria were necessary to allow for easy comparability with similar studies and to permit the use of balanced panel data, which has the advantage of more degrees of freedom and less multicollinearity among variables (Gujarati, 2003)

The main dependent variable of the study is return on assets (ROA). It has been adopted as a measure of profitability because it has more desirable distributional properties than other accounting measures, such as return on equity (Core et al., 2006) and also allows easy comparability with similar studies (e.g., Deloof, 2003; Tauringana and Afrifa, 2013; Lazaridis and Tryfonidis, 2006). The study has two sets of independent variables. The first set of independent variables include the traditional WCM (measured by cash conversion cycle) and its components (accounts payable in days, accounts receivable in days and inventory held in days) adopted by previous studies (Garcia-Teruel and Martinez-Solano, 2007, Tauringana and Afrifa, 2013). The second set of variables includes the set of contingent variables. These variables moderate the relationship between working capital

management and profitability. These contingencies are classified into three components by Luthan and Steward (1977): Environmental (E); Resources (R) and Management (M) variables of the firm. The control variables employed in this study are divided into two involving corporate governance variables and company characteristics variables. The corporate governance variables include: Chief Executive Officer (CEO) tenure and board size while company specific characteristics variables include: company size, asset tangibility, financial leverage, liquidity ratio and sales growth.

1.5 MAIN FINDINGS

The findings of the study accomplish the three main objectives set out for the study. The first objective was to determine the relationship between WCM and its components (AR, AP, and INV) and profitability as per extant research. The evidence from the study indicates a significantly negative relationship between WCM and profitability. This supports the argument made by some previous studies (Deloof, 2003; Banos-Caballero et al., 2013) that by minimising the investment in working capital, firms could enhance profitability due to the lower cost of financing and less reliance on external finance (Banos-Caballero, et al., 2013); reduced administrative costs (Mian and Smith, 1992) and less debt defaults (Cheng and Pike, 2003). The study also found a significantly negative relationship between accounts receivable (AR) and profitability. This evidence is consistent with studies of Deloof (2003); Lazaridis and Tryfonidis (2006); Padachi (2006); Garcia-Teruel and Martinez-Solano (2007) that a lower (AR) period improves companies' profitability because it frees up cash, which could be used to make payment of bills on time in order to enjoy early payment discounts and also helps the company to avoid the costly need of borrowing to fund investment in customers.

On the other hand, results of the study on the relationship between accounts payables (AP) and profitability rather found a significantly positive relationship. The evidence suggests

that through early payments of credit, firms are able to enhance their profitability through reduce transactional cost (Ferris 1981; Emery, 1987), enhance discount for early payment (Petersen and Rajan, 1997, 1994; Mian and Smith, 1992; Brennan et al., 1988; Schwartz and Whitcomb, 1979) and reduce information asymmetry between buyers and sellers (Smith, 1987; Long et al., 1993; Pike et al., 2005).

Finally, evidence from the study also suggests a negative but insignificant relationship between inventory holding period and profitability. On the basis of the evidence above, the study concludes that by recovering receipts from credit sales quickly while speeding up cash disbursements, companies could maximise their profitability. This result is consistent with prior studies that have looked into the relationship between working capital management and company profitability.

With respect to the second and third objective, the study estimated the relationship between working capital, its contingencies and profitability by interacting each component of working capital (AR, AP and INV) with environmental (E), resource (R) and management (M) variables as postulated in the contingency theory framework. In terms of the second objective, the study finds that the interaction of the main traditional measure of working capital (i.e., cash conversion cycle (CCC)) and organisation contingencies (environmental, resources and management factors) positively moderates the relationship between working capital management and profitability. On the other hand, when results of objective one was compared to the second, the study finds the relationship between working capital management and profitability to be better enhanced with the introduction of each interactive term. Against this evidence, the study suggests that the impact of working capital management on profitability of UK firms is modified and constraint by organisational contingencies (environmental, resource and management) variables of the firm. Therefore, the study suggests that a firm could maximise the benefit of pursuing a

lower cash conversion cycle (lower cost of financing and less reliance on external finance, reduced administrative costs and less debt defaults) by aligning the strategy with the environment and supporting such an alignment with resource and management capability.

However, in the third objective, the study also documented that the relationship accounts receivables (AR) and profitability is positively moderated by interaction of accounts receivables a (AR) and organisation contingencies (ERM) factors. In terms of accounts payables (AP), the study documented significantly positive relationship between profitability and the interaction of accounts payables (AP) and organisation contingencies (ERM) factors. The findings also confirm the hypothesis that the interaction of environmental, resources and management factors significantly moderates the relationship between accounts payables and profitability.

Finally, the study found a positive and significant relationship between profitability and the interaction of inventory level (INV) and organisation contingencies (environmental, resources and management factors). However, when the findings of the study in objective one was compared to results of objective two, the study finds the relationship between working capital management and profitability to be better enhanced with the introduction of each interactive term. Against this evidence, the study suggests that the impact of working capital management on profitability of UK firms is modified and constrained by organisational contingencies (environmental, resource and management) variables of the firm. On the basis of this, the study concludes that firm can maximise the benefits and minimise the cost of investment in working capital by aligning their working capital management policies with their environment and also arrange their resources internally to support such alignment as postulated in the contingency framework as any misalignment could significantly affect the firms' performance. As a result, the study suggests the need

for policy makers to match organisational resources with opportunities and threats in the general business environment in order to improve their financial performance.

1.6 CONTRIBUTION OF THE RESEARCH

The research makes a number of contributions to existing research. The most important contribution is the provision of evidence, for the first time, that the effect of WCM and its components (AR, AP and INV) on profitability is significantly moderated by the interaction of ERM. Although existing research (e.g., Deloof, 2003; Tauringana and Afrifa, 2013) have made a number of both theoretical and empirical contributions on the relationship between WCM, its components (AR, AP and INV) and profitability, they have not investigated whether the relationship may be contingent on organisational contingencies (environment, resources and management) of the firm as postulated by contingency theory. This is because a number of studies indicate that firms change their policy over time as they adjust to the demands of their environment (Ambrosini et al., 2009; Rueda-Manzanares et al., 2008) and their resources (Mol and Wijnberg, 2011) and management capabilities (Luo et al., 2013) in order to positively influence performance.

The other significant contribution of the research is that it demonstrates that the impact of (INV) and (AP) on firms' profitability changes under different conditions. Like other previous studies (Rajeev, 2008; Tauringana and Afrifa, 2013), the study found that WCM component (INV) does not drive the profitability of many firms. However, when ERM variables were taken into account, the results show that INV had a significant impact on profitability. Similarly, while WCM component (AP) does have a significant direct effect on profitability, the results show that when ERM variables are taken into account, AP does not have a significant impact on profitability. This suggests that the impact of (INV) and (AP) on firms' profitability needs to be understood in the context of firm-specific

characteristics. This will help managers identify the conditions under which firms are more effective as decision-making groups and which contingencies enhance or constrain firms' ability to enhance profitability through investment in working capital. For instance, Sprague and Wacker (1996) contend that a firm's inventory is controlled rather than managed in order to drive the practice and performance of firms. The rationale is that inventory management is not generally treated as a critical or strategic activity for firms because it constitutes part of the businesses strategic objectives.

According to their evidence, firms need to control their inventory by formulating detailed set of activities surrounding the order practices of individual inventory items taking into context the firm-specific characteristics which Luthans and Steward (1977) classified as environmental, resource and management factors. On the other hand, since (AP) constitutes a significant portion of firms' current assets used as a source of short-term financing for companies (Garcia-Teruel and Martinez-Solano, 2010) firms need to efficiently management rather than controlled (AP) to enhance their profitability.

Finally, the study also contributes to the limited research evidence on the relationship between WCM and its components (AR, AP and INV) profitability in UK where current knowledge and understanding is limited in view of the fact that late payment problems has been identified as a source of business failure. The few existing studies (Howorth and Westhead, 2003; Tauringana and Afrifa, 2013) that have investigated this area have primarily focused on smaller firms. The current research therefore contributes by proving evidence of the effect of WCM and its components (AR, AP and INV) based on large listed UK firms. The results in respect of large companies may be different to those reported in respect of smaller companies given that Wilison (2008) suggests that large firms tend to use their market power to exploit their 'dominant' positions as buyers in

competitive supply markets by taking ‘extended’ trade credit and thus leveraging their own profit and cash-flow.

1.7 OUTLINE OF THE RESEARCH

The thesis is composed of nine chapters and is structured as follows: Chapter two examines the recent developments and trends in working capital management in the UK. It acknowledges that many UK businesses have failed because of poor credit management and the main source of this problem is in late payment among businesses in the UK. The chapter is presented in two sections. The first section provides extensive discussion on the nature of the working capital and late payment problem, it reviews the causes of the problem and the various policy interventions instituted by the government and policy makers. The final section provides a summary of the chapter.

Chapter three presents the literature review of the study. It reviews empirical literature on the relationship between working capital management, its components and profitability. The rationale is to determine whether there is any consistency in the findings of the impact of working capital on firm profitability. It starts with the discussion of how working capital management, its components (accounts receivable (AR), accounts payable (AP) and inventory management (INV)) affects profitability differently. This is followed by a discussion of the influence of other control variables found to influence the relationship, then a summary of the results of previous empirical studies, limitation of current research and final summary and conclusion of the chapter.

Chapter four reviews the main theoretical underpinnings of the relationship between working capital management, its contingencies and profitability. It adopts the contingency theory to explain the relationship between working capital management, its contingencies

and performance. The framework enabled prior identification of the relevant research questions and the independent variables to direct the study.

Chapter five of the study translates both the theoretical and empirical studies discussed in chapter four on the relationship between working capital management, its contingencies and profitability into testable hypotheses. The first four hypotheses determine the direct relationship between working capital management (WCM), its components (AR, AP and INV) and profitability as determined by previous studies. The objective is to isolate the impact of WCM, its components (AR, AP and INV) on profitability in order to determine if the impact may be caused by multiple contingent factors as postulated in the contingency framework. The second four hypotheses are developed to determine whether the impact of WCM and its components (AR, AP and INV) on profitability is constrained by the interaction of contingent factors as postulated in the contingency framework in chapter five. The four hypotheses developed, however estimate the importance of these contingent variables in investigating the relationship between WCM and its components (AR, AP and INV) on profitability. In the final section, eight set of hypotheses tests the influence of other control variables on firms' profitability. These control variables are divided into company characteristics variables and corporate governance variables.

The methodology of the thesis is presented in chapter six. The chapter provides a detailed description of the data and methodology adopted, rational for the choice of data and methodology. It starts with a description of the data and procedure for sample selection, the various variables employed in establishing the hypotheses. This is followed by a discussion on the tools used for data analysis.

Chapter seven presents empirical results on the study on the relationship between working capital management, its contingencies and profitability. It presents empirical results of the

sixteen hypotheses formulated in the first and second part of chapter five using the methodological framework presented in chapter six. The chapter presents the empirical evidence of the direct relationship between WCM and its components (AR, AP and INV) on profitability whiles controlling for selected corporate governance and company characteristics as examined by most previous studies. Its objective is to isolate the impact of WCM and its components (AR, AP and INV) on profitability in order to determine if the impact may be caused by multiple contingent factors as postulated in the contingency framework.

In chapter eight, the study presents empirical evidence of the relationship between working capital management, its contingencies and profitability. The chapter is divided into two major sections. The first section investigates the relationship between working capital management and profitability using the contingency theory framework. It presents empirical results of the last four hypotheses developed to determine whether the impact of working capital management on profitability is constrained by the interaction of contingent factors as postulated in the contingency framework in chapter five. In the final section, a further analysis of the relationship between working capital management, its components and profitability was estimated to enhance the robustness of the results. Following the work of Baños-Caballero et al. (2013), the study sample was divided into two, based on the cash flow composition of firms. Firms with a cash flow above the sample median are assumed to be less likely to lack cash flow, whiles firms with a cash flow below the sample median are assumed to suffer from a lack of cash flow. The study used the akaike criterion (AIC) as a decision criterion for the best fit models.

Chapter nine presents a final summary and conclusion of the thesis. It provides a summary of the research objective, methodology and techniques adopted for the study. It also

summarises the policy implication, contribution as well as the main limitations and potential insight for future research and improvements of the study.

CHAPTER TWO

TRENDS AND DEVELOPMENTS IN WORKING CAPITAL MANAGEMENT IN UK

2.1 INTRODUCTION

This chapter presents a discussion on recent trends and development of working capital management on the profitability of firms in the UK. Indeed it is acknowledged that many UK businesses have failed because of poor credit management and working capital management (Perrin, 1998; Summers and Wilson, 2000) and it's evident that the main source of this problem is in late payment among most UK firms. According to Wilson (2008), when payments are overdue and the payment date becomes uncertain, then, the financing costs, and management time involved in chasing payments and financing the delay can seriously erode the profitability and strain business relationships between the firm, its bankers and suppliers. The rest of this chapter is organised as follows: Section 2.2 provides and discusses extensive review on working capital and late payment problem in UK. It reviews the causes of the problem and some of the policy interventions aimed at tackling the 'late payment problem'. Finally, section 2.3 summaries the chapter.

2.2 WORKING CAPITAL AND THE LATE PAYMENT PROBLEM IN UK

2.2.1 Working Capital Developments in UK

Efficient working capital management has been identified as a vital component to the success and survival of firms (Peel et al., 2000; Tauringana and Afrifa, 2013). The provision of credit among firms in the UK has been a widespread practice and exists as long as business-to-business trade exist. However, research indicates that due to the high cost of external finance (Whited, 1992; Fazzari and Petersen, 1993; Petersen and Rajan,

1997) some firms rely heavily on WCM as a source of finance (Padachi, 2006). According to Lee and Stowe (1993), “trade credit is one of the most important forms of financing [exceeding] the business lending of the entire banking system”. Petersen and Rajan (1994) argue that firms will use trade credit when cheaper sources of finance are exhausted which, it has been argued, could be an indicator of credit rationing (Wilson et al., 1996). The situation according to Wilson (2008) tend to be pronounced during periods of tight monetary conditions as most firms tend to bear the brunt of the credit squeeze as most financial institutions are not in the position to offer credit. As a result most firms fill this transitory financing gap through increased trade credit supply from larger businesses that are not as subject to credit rationing. Riskier companies increased their use of trade credit as a substitute for bank credit, while failing firms and firms in financial distress supply more credit as a means of trying to secure sales and take more credit from the supply base as bank credit becomes restricted (Wilson, 2008).

Working capital management is important to firms because it involves a trade-off between risk and profitability (Smith, 1980). Nasir and Afza (2009) contend that firms can minimise risk and increase profitability by understanding the importance of working capital. Recent studies (Tauringana and Afrifa, 2013) and recent policy initiatives on working capital management in UK (such as the Late Payment of Commercial Debts (Interest) Act 1998, amended in 2000 and 2002) have demonstrated the importance of the working capital management and its components on firms’ value in UK (Baños-Caballero et al., 2013; Wilson, 2008; Paul and Boden, 2008; Tauringana and Afrifa, 2013). Empirical evidence by Wilson (2008) suggests that unsecured trade credit constitutes significant proportion of balance sheets of most UK businesses. It constitutes about 80 per cent of business-to-business transactions in UK (Peel et al., 2000). According to Pike and Cheng (2001), accounts receivables constitutes 19% of total assets of large companies in the UK

and over 30% in small/medium-size firms in the UK (Wilson et al., 1995). Wilson and Summers (2002) suggest that in the UK, trade credit has been estimated to exceed the primary money supply by an average factor of 1.5, whilst in the USA trade credit supply “represented approximately 2.5 times the combined value of all new public debt and primary equity issue during a year.

Furthermore, trade debtors also play a key role in the cash conversion cycle of firms in the UK. Aaronson et al. (2004) reported that 60.8 per cent of firms had outstanding credit from suppliers. According to Manager (2009), £26 billion is currently owned by their customers of British business making trade debtors one of the most riskiest assets UK firms are likely to have (Paul and Wilson, 2006; Peel et al., 2000; Pike et al., 1998). In a similar report by Wilson (2008), stocks and flows of trade credit was found to be twice the size of those for bank credit (Wilson, 2008) with limited companies’ debtors exceeded £53 billion constituting up to 45 per cent of their total assets (65 per cent of current assets). However, within industry sectors, according to Wilson’s report, the trade debtor share of assets was remarkably stable over the time period 1997-2006 while trade creditors were generally rising over the same period. It was also found that transport, hotels and restaurants sector to the largest share of the assets with a relatively low levels of trade debtors while business services and agriculture had a relatively high levels of trade creditors. Typically, between 40-75% of total liabilities and up to 84% of current liabilities were made up of trade creditors. Empirical evidence of Tauringana and Afrifa (2013) also supports this evidence. They found trade debtors to be the most important working capital component among British firms.

Against this backdrop, the management of trade credit positions of firms in the UK is very critical. According to Paul and Boden (2008), the management of trade credit is of relevance importance for effective risk management and corporate value particularly larger

UK companies giving that most larger companies invest significantly in accounts receivables (Pike and Cheng, 2001). It is suggested by Paul and Boden (2008) that firms are in the position to extend their trade credit, when the rewards in delaying the receipt of payment for goods outweigh inherent risk of delaying the payment of goods.

According to Wilson et al. (1995), firms that invest in more sophisticated credit management practices and give more importance to “front-end” credit management (i.e. risk assessment) display lower debtor days, fewer bad debts and, consequently better cash-flows. One of such sophisticated credit management practices adopted by most large UK firms and firms with seasonal trading according to Pike and Cheng (2001) is the use of direct debit arrangement. They argue that such methods give rise to shorter debtor and days overdue. Empirical evidence of Pike and Cheng (2001) also reports that most firms place a high priority on reducing trade credit risk. They argue that customer characteristics such as strong customer relations and product/service quality helps to reduce default risk among firms.

Despite the above evidence, research (e.g., Paul, 2004; Peel et al., 2000; Peel and Wilson, 1996) also suggests that most UK companies prioritise cash flow and inventory management. Empirical evidence from (Paul and Wilson, 2006; Pike and Cheng, 1996) suggests a significant drop on inventory levels as compared to firms’ debtors which is reported to have doubled over the last decade (Paul and Boden, 2008).

2.2.2 Late Payment Problem in UK

Late payment of trade credit is described as an extension of the demand for trade credit. It is often linked with suppliers and customers relative power positions (particularly when customers assumes a monopolistic or oligopolistic position), markets competitiveness, changes in payment technologies and customer concentration disruptions (Paul and

Wilson, 2006). Prior to a sale, business suppliers often agree credit terms with their customers including the expected payment period which vary in relation to product characteristics, customer characteristics and location, trading relationships, market structure and the relative bargaining strength of suppliers and buyers (Wilson, 2008). Often, payments are made after the agreed credit periods. Consequently, payments made after the agreed due date of payments is referred to as late payment.

Late payment still remains a major problem for many UK firms in spite of all the various measures and legislations (such as the Late Payment of Commercial Debts (Interest) Act 1998, amended in 2000 and 2002) taken by the UK government (Paul and Boden, 2008). It is estimated to cost the UK economy over £20 billion a year (Accountancy, 2007). In a 2011 report by the Federation for Small Business (FSB), over 4,000 businesses failed in 2008 as a direct result of late payment and it costs UK businesses £180 million in debt interest charges. The report found that the private sector to be the worse culprit 77% particularly the manufacturing and construction industries. It also found that a significant section of the public sector (local government and Government department) failing to pay promptly. Peel et al. (2000) investigated the relationship between late payment and firm size. Evidence from their study finds that large firms to be the worst offenders of late payment. Pike and Cheng (2001) also found a strong correlation between the size of the firm and late payment problem with smaller companies experiencing the longest payment delay. The European Commission (Europa, 2009) reports that SMEs are owed twice as much trade credit as they themselves owe to large businesses.

In the same vein, value over the period 1997-2007, the UK Credit Management Research Centre (CMRC) quarterly, reports a constant mean value for the late payment index which by implication meant no systematic change in the payment behaviour among sample firms. However, the CMRC quarterly survey finds that over the period, the average overdue

period ranges from 17-22 days with both small and large firms reporting payment delays 22 and 8 days respectively. According to CMRC and Intrum Justitia research on credit management among the UK and other European countries, most British firms had 34 days and 18 days average credit and overdue payment periods respectively. This according to the report makes British firms the worst performers in terms of credit management among northern European countries. In an attempt to determine the impact of the late payment problem among businesses in the UK, CMRC found 52% of firms adversely affected by late payments with large firms been the worst offenders of paying late.

2.2.3 Causes of Late Payment Problem in UK

Late payment is cause by a number of factors: First, weak financial and working capital management practices. Wilson et al. (1995) also identified poor credit management practices as one of the underlying causes of late payment problem in the UK. Wilson (2008) argues that when businesses become uncertain on the timings of future payments of trade credit granted, the management of cash flow becomes a serious problem. He found that the situation even become worsens for sole proprietors as their focus and time become shifted away from the firms' core business strategy to chasing payments. According to Wilson (2008), when slow payment progresses to protracted default and bad debt the whole viability and survival of the business can be at risk. Pike et al. (1998) suggest that firms with very poor credit management often tend to suffer from late payment problem and vice versa. Paul and Boden (2008) also suggest that scale and magnitude of the late payment problem in the UK could be attributed to the inefficiency in both management and the regulatory frame work to institutionalised pragmatic policies to combat the problem. Second, poor business practices, inefficient credit management and unclear credit terms (Paul, 2004). According to Paul (2004), firms with more ad hoc credit management

practices under no clear terms usually tend to have increase bad debt and usually poor credit control processes as compared to those with efficient credit management processes.

Third, the quality of products and customer service. Previous studies (e.g., Wilson, 2008; Pike and Cheng, 2001) attribute late payment of firms to product quality and the level of customer service offered by firms as unsatisfied customers will withhold their payments (Paul et al., 2012).

Fourth, economic conditions. Wilson (2008) relates late payment to economic condition surrounding firms. He argued that during period of economic down turn, the level of bad debt increases since customers of trade credit struggle to survive. This, therefore, puts an inordinate level of risk to suppliers of trade credit. As a result firms in financial distress in order to alleviate their own cash-flow problems tend to stretch their creditors. Thus, firms that have difficulty raising finance face the problem of balancing cash inflows–outflows and late payment is both a cause and effect of this problem (Howorth and Wilson, 1999). Garcia-Teruel and Martinez-Solano (2010) also suggest that in spite of the cost attached to paying late, most firms still see it as much cheaper compared to bank loans renegotiation.

On the other hand, Howorth and Reber (2003) attributed the habitual late payment on trade credit among UK businesses to difficulties firms face in obtaining finance and also lack of financial stability for habitual late payers. Evidence of their study found a strong evidence of a financing demand for habitual late payment, a positive relationship between habitual late payment and difficulty obtaining bank finance and late payment by debtors. Finally, the relative power positions of suppliers and customers. Paul and Wilson (2006) attributed the relative power positions of suppliers and customers (especially where the customer is in a monopolistic or oligopolistic position), competitiveness of markets, disruption

associated with changes in payment technologies and customer concentration to late payment.

2.2.1 Government Legislation

2.2.1.1 Late Payment of Commercial Debts (Interest) Act

On the basis of the above evidence presented, preferred legislations and government interventions were set in place to encourage companies to pay within the agreed terms and possibly change payment behaviour by creating a level “paying” field (sic) (see Wilson, 2008). The arguments put forward by various lobbying groups centred on whether the interventions of the government through legislation or simply efficient financial and credit management practice was a prerequisite to bring about change and ameliorate the problem faced by most UK firms alleviate the problems. For example, the Institute of Directors (IOD, 1993) argued that small firms are not the ‘helpless victims’ of the late payer but that the majority of overdue debtors can be reduced by improved business practices and internal credit management. Also, another vociferous lobbying group to mitigate the effects of late payment on the smaller firm sector was the Forum for Private Business (FPB), a representative of a large section of small UK businesses (Gray, 1997a). However, their policy prescription was the statutory imposition of interest on late payment by debtors.

The rationale of the proposed interest charge was to deter late payers and also to compensate suppliers in times of late payment. The provision according to HMSO (1998), would bind all firms to pay promptly and also create a level playing field in payment behaviour among firms (Wilson, 2008). On the other hand, a number of contrary arguments were made against the proposed statutory interest charge. According to Wilson (2008), since trade credit is often used a competitive tool and a means to build relationships, the imposition of statutory interest for late payment would not very efficient.

This is because suppliers may wish to retain the flexibility to vary (informally) credit terms for specific customers so as to meet competition and customers may value the freedom to negotiate payment periods with their suppliers as financial circumstances dictate (Gray, 1997b).

More so, the imposition of statutory interest could also deprive most firms, which are unable to obtain finance from other sources such as financial institutions (Peterson and Rajan, 1995), a key source of short term finance. Cosh and Hughes (1994) suggest that financially distressed firms and firms which unable to obtain alternative source of finance from the main traditional financial institutions, tend to use trade credit as a source of finance. According to Wilson (2008), some firms extend credit in order to win business and establish reputation in the market. Against this backdrop, Wilson (2008) suggests that most firms are reluctant to impose interest penalties on customers for fear of losing business to competitors with more financial resource to absorb some late payments.

In 1997, the elected Labour Government in an attempt to combat the problem of late payment problem considered a number of policy interventions as listed above. In order to 'improve the payment culture' among UK firms, the government published a Green Paper in 1997 which spell out how the government was going to achieve this objective. A number of responses were also taken from the relevant parties in order to objectively deal with the issue. The late payment of Commercial Debts (interest) Act was proposed and by summer of 1998, the proposal was drafted into a Bill which gave business the right to claim interest on late payment of commercial debt. The rational was to encourage firms to agree their own contractual terms giving a right to interest if bills are paid late. The legislation would, therefore, give precedence to contractually agreed provisions. However, the Bill contained provisions to prevent parties to a contract "contracting out" of the legislation by setting excessively low rates of interest on late payments, by extending credit

terms excessively or by any other terms which result in no substantial remedy for late payment. The provisions would apply a test of "reasonableness" to such terms (Wilson, 2008).

The proposed Bill was in 'phased' in three stages. In the first phase of the proposal, only small firms had the right to claim interest on late payment of commercial debt from larger firms and other public sector organisations. After two years of the implementation of the first phase of the Bill, the right was extended for small firms to claim interest on late payment of commercial debt from all enterprises and the public sector. Finally, after another two years the right was open to all firms and organisations to charge interest on late payment of commercial debt from other firms in the UK. However, Parliament was given the opportunity to debate the phasing proposals when the clause giving the order-making power was discussed.

In the proposal, few issues were clarified. One issue was the definition of 'late payment'. It was clearly stated that when payment is received after the expiring date of the contractually agreed credit period; or the credit period in accordance with trade custom and practice or in the course of dealing between the parties; or the default credit period defined in the legislation then the payment is considered 'late'.

Another issue was the test for 'smallness' of firms. Two out of three criteria test for 'smallness' was defined in the Green Paper according to section 247 of the Companies Act 2006. However, it became apparent that to take that test out of its context (i.e. filing accounts in respect of a completed year by companies incorporated in the United Kingdom) and use it in another would lead to difficulties of proof.

On the basis of this, it was further proposed that the legislation redefine a company as being "small" when it has its full time employees not more than 50. The proposed

legislation was further extended to be implemented across the UK and to any commercial contracts, including imports and exports, written under the law of part of the UK, except where there is no significant connection between the contract and that part of the UK, and, but for the choice of law, the applicable law would be a foreign law (Wilson, 2008). According to Wilson (2008), when the choice of law is a foreign law, the Bill would apply if, but for that choice of law, the applicable law would have been a law of part of the UK and there was no significant connection between the contract and any country other than that part of the UK. However, there was no minimum level set below which a claim for interest could not be made. Based on the results of the Green paper, it was proposed that creditors could freely determine on which debts to make a claim for interest.

On the other hand, the Bill identified a 30 day default credit period starting from when the invoice of payment for the delivery of goods and services when in the contract no credit period was defined. In terms of the rate of interest, the legislation proposed a +4% rate of interest which equated banks average lending margin to smaller firms in the UK. As a result, small firms were charged for term lending and agreed overdrafts. Instead of the proposed +4% rate of interest, a base rate of + 8% was proposed by the Bank of England. Furthermore, the separation and assignment of interest proposed by the Government allowed the separation of interest and the assignment of the interest on the debt.

After several debates and amendments on the Bill, it was finally implemented in several stages and later amended in line with the EU late payment directives. The new legislation was named as the Late Payment of Commercial Debts (Interest) Act 1998. The new Act entitles firms to claim a statutory right to interest on late payment of trade debts. This was, however, phased over four year period. It introduced the first stage in November 1998, the second stage in 2000 and finally the last stage in 2002. In the first phase, smaller firms had the right claim interest on late payment of commercial debt from larger firms and other

public sector organisations. The right was extended for small firms to claim interest of 8% on late payment of commercial debt from all enterprises and the public sector at an interest at 8% above the existing Base Rate on debts in the second phase. In the final phase, right was open to all firms and organisations to charge interest on late payment of commercial debt from other firms in the UK. The Legislation had been revised to bring it into line with the EU directive.

2.2.4.2 EU Directive 2000/35/EC on Late Payment

The European parliament and the Council on combating late payment in commercial transactions published on 8 August 2000 the Official Journal L 200, page 35. However, the directives came into force on 8 August 2002 for the then 15 Member States (and the three States of the European Economic Area); on 1 May 2004 for another 10 European countries and in 1 January 2007 for Bulgaria and Romania. Its focus was to bring member states into line in terms of all payments made as remuneration for commercial transactions. This was as a result of the payment system gap between the free circulation of goods and services on the one hand and the timely receipt of the corresponding payments on the other. The EU found this gap from the various surveys which found that at that time that about 21% of businesses had their exports increased if payments delays were shortened. However, the Commission felt this Internal Market imbalances were necessary to be corrected as the wide variations were shown to exist between the payment performances in the Member States. Surveys by Grant Thornton in 2000 showed that in six Member States, more than 40% of invoices are still unpaid after 60 days.

In an attempt to combat the late payment of commercial transactions, the European parliament instituted a number of measures and directives which were published on 8 August 2000. These directives came into effect two years after they were published for the then 15 Member States (and the three States of the European Economic Area). Later, 10 Member States were included in May, 2004 and in January 2007; it was expanded to include Romania and Bulgaria. The rationale was to harmonise and ensure that payment behaviour among member states are in line with all payments made as remuneration for commercial transactions (Wilson, 2008). This was as a result of the payment system gap between the free circulation of goods and services on the one hand and the timely receipt of the corresponding payments on the other.

As a result the commission designed these directives to remedy the situation based on Article 95 (ex-100a) of the EC Treaty due to the close link with the free circulation of goods and services. The legislation excluded: all contracts made before 7 August 2002; claims for interest of less than €5 and transactions with consumers or debts that are subject to other laws (e.g., insolvency proceedings) (Wilson, 2008). According to the directives, statutory interest automatically becomes payable 30 days after the date of receipt of the invoice or the date of receipt of the goods or services except only when the date or period for payment, and/or any penalty rate, have been fixed in the contract.

2.3 CONCLUSION

The objective of this study was to provide an overview of the importance of working capital management and late payment problems in UK, as recent policy interventions aimed at tackling the 'late payment problem' do not appear to have been informed by much empirical and / or theoretical research. The chapter was structured into four sections. Section 2.2 provided and discussed extensive review on working capital and late payment

problem in UK. It reviews the causes of the problem and some of the policy interventions aimed at tackling the 'late payment problem'. In section 2.3 presented summary of the chapter.

CHAPTER THREE

LITERATURE REVIEW

3.1 INTRODUCTION

The impact of working capital management (WCM) and its components (AR, AP and INV) on companies' profitability has been a focus of much empirical research because working capital investment affects firm's profitability, risk and consequently its value (Smith, 1987). Previous studies on the impact of WCM on firms' profitability could be classified into two competing views of working capital investment (Baños-Caballero et al., 2013). Under one view, higher working capital levels allow firms to increase their sales and obtain greater discounts for early payments (Deloof, 2003) and, hence, may increase firms' value. Alternatively, higher working capital levels need to be financed and consequently, firms face additional financing expenses that increase their probability of going bankrupt (Baños-Caballero et al., 2013).

This chapter reviews literature on the relationship between working capital management and profitability. It discusses the interrelationship between the individual components of working capital and corporate profitability. The rationale is to determine whether there is any consistency in the findings of the impact of working capital on firm profitability. The discussion starts with how the individual components of working capital (accounts receivable, accounts payable and inventory management) affect working capital management and profitability differently. This is followed by the discussion of the influence of other control variables found to influence the relationship between WCM on profitability by previous studies. These variables have been included in the study in order

to prevent any possibility of omitted bias (see Bartov et al., 2000). They include: corporate governance and firm characteristics variables. Corporate governance variables include: board size and Chief Executive Officer (CEO) tenure while firms' characteristics include: company size, asset tangibility, financial leverage, liquidity ratio and industry classification (see, Chittenden et al., 1996; Majumdar, 1997; Kakani and Kaul, 2002; Caesar and Homes, 2003; Inmyxai and Takahashi, 2010).

The rest of the chapter is structured as follows. Section 3.2 presents a discussion on the relationship between of WCM and profitability by previous studies on the relationship between working capital management and profitability. Section 3.3 identifies the impact of other control variables identified by previous researchers as relevant variables in influencing the relationship between working capital management and profitability. A summary of the results of previous empirical studies is presented in section 3.4. Section 3.5 presents the limitation of current research. Finally, there is summary and conclusion.

3.2 THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT, ITS COMPONENTS AND PROFITABILITY

Working capital is an important tool for growth and profitability for corporations because it affects the company's risk, return, and firm's value. The cash conversion cycle (CCC) has been the main traditional measure adopted by previous studies (Soenen 1993; Deloof 2003; Garcia-Teruel and Martinez-Solano 2007; Banos-Caballero et al., 2010) to measure working capital management of a firm. It is decomposed into three components, (i.e. inventory management, accounts receivable management and accounts payable management). In order to better understand the relationship between working capital management and profitability, Afrifa (2013) suggests that we decompose the individual components of working capital management separately as the various components of working capital management affects profitability differently. On the basis of this argument,

the various individual component of working capital management are discussed separately in order to delineate their individual effects on firms' profitability.

3.2.1 Working capital management and Profitability

Empirical studies relating to working capital management and profitability have been carried out in different environments. Most of these empirical studies support the traditional belief about working capital and profitability which suggest that reducing working capital investment would positively affect the profitability of firm (aggressive policy) by reducing the proportion of current assets in total assets (Garcia-Teruel and Martinez-Solano, 2007). Previous studies (e.g., Deloof, 2003; Falope and Ajilore, 2009; Garcia-Teruel and Martinez-Solano, 2007) have adopted cash conversion cycle (CCC) as the traditional measure for WCM. It measures the time lag between expenditure for the purchase of raw materials and the collection of sales of finished goods. Soenen (1993) asserts that the length of the CCC determines the firm's profitability. Firms with a longer cash conversion cycle are able to stimulate sales (Banos-Caballero et al., 2010), prevent production interruptions, strengthen a firm's long term relationship with their customers (Ng et al., 1999), influence the acquisition of merchandise at times of low demand (Emery 1987), allows customers time to pay (Long at al., 1993; Deloof and Jegers, 1996), reduces the information asymmetry between buyer and seller (Smith, 1987). Longer cash conversion cycle can help customers to differentiate between products (Shipley and Davis, 1991; Deloof and Jegers, 1996), can be used as an effective price cut (Brennan et al., 1988; Peterson and Rajan, 1997), and strengthens long-term supplier/customer relationships (Wilner, 2000).

Empirical work of Martinez-Sola et al. (2013) support the argument that when firms relax their credit period, firms are able to reduce the storage costs of the excess inventories

accumulated which could also improve their profitability. Other studies (eg. Gill et al., 2010; Raheman et al., 2010; and Sharma and Kumar 2011) also found a positive association between working capital management and profitability.

Contrary to the above evidence, a number of studies (Deloof, 2003; Banos-Caballero et al., 2013) have demonstrated that firms with shorter cash conversion cycle tend to have higher profitability. It has also been argued that firms with a shorter cash conversion cycle are able to maximise profitability due to their ability to internally generate funds, which could reduce their reliance on external finance which often turns to be expensive (Autukaite and Molay, 2011; Banos-Caballero et al., 2013). According to Luo et al. (2009), firms with shorter cash conversion cycle free up more funds, which are invested in growth projects, thereby allowing them to rely less on external financial market, resulting in a lower cost of capital and thus improving their profit margins. Following this line of thinking, Autukaite and Molay (2011), contend that, through effective working capital management, firms are able to reduce their reliance on external financing, lower their financing cost and enjoy financial flexibility. According to them, effective working capital management puts firms in a better position to attract cheaper funding from both shareholders and lenders since it tends to improve risk profile of most firms. Ganessan (2007) suggests that reducing the investment in working capital leads to less need for financing and less cost of capital, which increases the cash available to shareholders. Deloof (2003) found a significant negative relation between profitability measured by gross operating income and cash conversion cycle, as well as the number of day's accounts receivable and inventories. He suggested that more profitable companies pay their bills faster. With faster payments, companies are able to utilise the discounts offered by the suppliers. Deloof (2003) further suggested that managers can create value for their shareholders by reducing the number of day's accounts receivable and inventories to a reasonable minimum.

However, other empirical evidences have shown that firms with shorter cash conversion cycle tend to have higher profitability. For example, Lazaridis and Tryfonidis (2006) argue that the longer a company delays its payments to suppliers, the higher the level of WC levels it reserves and uses in order to increase profitability. However, an attempt to demand more credit from suppliers may reduce profitability as the firm may lose out on the discounts, which can exceed 20 per cent depending on the discount rate and discount period granted (Ng et. al., 1999; Wilner, 2000). In another study, Garcia-Teruel and Martinez-Solano (2007) on a panel of 8872 small to medium–size enterprises in Spain, also found a significant negative relation between an SME’s profitability and the number of day’s accounts receivable and days of inventory. They suggested that managers can create value by shortening the cash conversion cycle as it increases the cash flow available to a company, which can be used to run the day-to-day operations of a company. Banos-Cabellero et al. (2013) contend that a company could reduce their dependence on outside financing, lower their financing cost and enjoy financial flexibility with a shortening the cash conversion cycle.

3.2.2 Accounts Receivables and Profitability

Accounts receivables can be seen as short-term loans to customers given by the supplying firm. According to Peel et al. (2000), trade credit involves supplying goods and services on a deferred payment basis, which gives customers time to pay. It results in a delay between the delivery of goods and the provision of services by a supplier and payment for them (Garcia-Teruel and Martinez-Solano, 2010). Empirical evidence (Banos–Caballero et al., 2013; Garcia-Teruel and Martinez-Solano, 2010a; Peel et al., 2000) demonstrates that a company’s profitability is significantly affected by its accounts receivable policy. However, the nature of the relationship between accounts receivable level and firm profitability depends on the particular receivables policy adopted by a firm (Garcia-Teruel

and Martinez-Solano, 2007; Afrifa, 2013; Tauringana and Afrifa, 2013); and firms can pursue a conservative or aggressive receivables policy (Weinraub and Visscher, 1998; Nazir and Afza, 2009).

An aggressive receivables policy will lead to reductions in the accounts receivable period. A reduction in accounts receivable period may increase profitability because it will increase the cash flow available to a company, which can help companies to make timely payments to their obligation and avoid the prospect of running out of cash, which could lead to bankruptcy (Couderc, 2006). Arena and Julio (2010) argue that cash holding acts as a buffer between cash flows and debt obligation and potentially reduces the costs of financial distress. The availability of cash will help companies to make timely payments to its obligation and avoid the prospect of running out of cash, which could lead to bankruptcy. This supports Ferris (1981) transactional cost theory on trade credit. According to the theory, firms are able to enhanced operational efficiency through a reduction in transactional cost by reducing their accounts receivable period. Other similar studies (such as Petersen and Rajan, 1997; Nelson, 2002; Banerjee et al., 2007; Bhattacharya, 2008) have argued that a reduction in accounts receivable period enhances firms' profitability through reduction in transactional cost of paying bills (Peterson and Rajan, 1997). Similarly, a number of empirical evidence on the effect of accounts receivable management on firm profitability supports these arguments. For instance, Deloof (2003) found a significantly negative relation between accounts receivable and profitability on a sample of selected Belgian firms. He attributed this negative relationship to the fact that most customers tend to require more time to assess the quality of products they buy from firms with declining profitability.

In a similar study, Garcia-Teruel and Martinez-Solano (2007) used a panel of 8872 Spanish small and medium-size enterprises to investigate the impact of working capital

management on SME profitability. Evidence of their study reveals a significantly negative relation between an SME's profitability and the number of day's accounts receivable. On the basis of this evidence they suggested that managers can create value by reducing the number of days for which their accounts are outstanding. This is because of the high cost associated with investment in working capital.

Raheman and Nasr (2007) in their research on the effect of working capital management on firm's profitability on selected sample of 94 Pakistani firms listed on Karachi Stock Exchange for the period 1999-2004 found a significantly negative relationship between accounts receivables and profitability. They concluded that firms should focus on managing their cash and accounts receivables in order to increase their profitability since shorter agreed payment terms helps firms to separate their payment cycle from the purchase cycle. This according to them makes the arrangement to pay more convenient and immediate. According to Schwartz (1974), companies are able to plan and manage their financial resources better when they are able to have a fixed payment period and also able to separate their payments from purchases. Stowe and Gehr (1985) contend that companies are also able to reduce the risk of monetary theft and increase their profitability through separation of payments from purchases.

Empirical evidence of Bhattacharya (2008), demonstrates that firms are able to use their trade receivables policy as an effective cost saving tool to enhance their profitability. According to him, firms are able to use trade credit as an effective price cut tool during period of severe demand fluctuation. Firms also tend to tighten their trade receivables policy when there is a rise in sales. This is consistent with empirical evidence of Long et al (1993). According to Long et al (1993), variable demand companies tend to offer more extended credit period as compared to companies with stable demand.

On the other hand, Tauringana and Afrifa (2013) in their study on the relative importance of working capital management and its components on SMEs profitability in the UK found the management of accounts receivable (AR) to be the most important working capital management component for SMEs profitability. Tauringana and Afrifa (2013) attributed these findings to the fact that most SMEs have limited access to finance in the capital market as a result, they tend to rather prioritise AR as a source of cash flow to their operational needs. On the basis of such evidence they concluded that by reducing the accounts receivable and payment period, firms could enjoy the advantage of holding a positive cash flow holding, which tends to enhance their profitability. Some of these advantages include: reducing the cost of financial distress, taking advantage of positive speculation and growth opportunities, meeting the day to day operational expense and also providing insurance against shortfalls in cash. Samiloglu and Demirgunes (2008), Sen and Oruc (2009), Nobanee and Alitajjar (2009b) and Dong and Su (2010) have also reported similar results on the relationship between accounts receivable period and profitability.

A firm can also adopt a conservative strategy to its receivables policy by increasing its investment in working capital. Emery (1987) contends that the rationale for extending trade credit among firms is often driven purely by the need for firms to achieve higher profitability through enhanced operational flexibility. According to Smith (1987), delayed payment facilitates exchange by allowing the necessary time for customers to verify the quality of the product before paying. This helps reduce the level of information asymmetry between the buyer and the seller. Empirical evidence of Long et al. (1993) supports this argument. Evidence of their study reveals that smaller firms and firms with goods whose quality requires longer assessment tend to have a longer trade credit period since some of the buyers especially the new ones have little knowledge about the quality of the product. This evidence has also been supported by Garcia-Teruel and Martínez-Solano (2010). They

also argued that smaller and younger firms give more trade credit, since their customers do not have any reasons to trust that the quality of their products. Therefore, according to Pike et al. (2005), through product quality guarantee, firms are able to reduce the information asymmetries between a buyer and a seller. This according to Bastos and Pindado (2007), facilitates future sales of the product and profitability for the firm since it helps eliminate any future contentions of the product as customers are allowed the product before any future payments are made. Customers also have the opportunity to avoid payment and return the product to the supplier if they are unsatisfied with its quality.

Empirical evidence of Garcia-Teruel and Martinez-Solano (2010a) suggest that product quality guarantee also saves both the buyer and seller the time and cost of going through cash refund in a case where the buyer returns the product due to the non-payment.

Ramachandran and Janakiraman (2009) on the relationship between WCM efficiency and company profitability on a sample of 30 companies listed on the Bombay Stock Exchange from 1997/8 to 2005/6, found a significantly positive relationship between a firm's working capital and its profitability. However they concluded that most profitable firms extend the number of day's accounts receivables as a way of enticing their customers to purchase more of the product/ service which in the long run improves their profitability. This evidence is consistent with the product differentiation theory. According to the product-differentiation theory of trade credit, firms use accounts receivables like any other sales-promotion tool to increase sales and profitability (Nadiri, 1969; Blazenko and Vandezande, 2003). Accounts receivables, according to the theory are used as a sales tool to differentiate the company's product from its competitors (Nadiri, 1969; Blazenko and Vandezande, 2003) so that consumers prefer to buy that firm's products rather than a competitor's. Various studies (e.g., Nadiri, 1969; Shipley and Davis, 1991; Deloof and Jegers, 1996; Blazenko and Vandezande, 2003), have suggested that through extended

accounts receivables policy, most companies are able to convince their customers that their products are worth the value of their money.

Also, empirical evidence of Brennan et al. (1998), Mian and Smith (1992) demonstrates that some firms use extended accounts payable as a price discrimination tool to enhance profitability. This may depend on whether the firm delays or gives discount to its customers. Smith (1992) identified two ways of implementing price discrimination to firms. The first is allowing a delay in payment and second is by giving a discount in payment, which can be seen as a price reduction. This theory of price discrimination is empirically tested by Petersen and Rajan (1997). They found that firms with a high profit margin benefits when they raise their sales. Through granting more trade credit, a firm is able to raise their sales. This is beneficial for firms with high profit margins, because the profits of this raising of sales surpass the costs of granting trade credit (Petersen and Rajan, 1997; Garcia-Teruel and Martínez-Solano, 2010). Garcia-Teruel and Martinez-Solano (2010a) suggests that a customer will end up paying a lower price when given an extended credit period compared to those with a shorter payment period.

According to Petersen and Rajan (1994) and Bhattacharya (2008), through price discrimination, firms are able to improve their profitability through high implicit rate of interest charges on high-risk customers who find it difficult to obtain credit from financial institutions. Despite the high implicit rate of interest, most firms consider trade credit as a cheaper source of finance (Petersen and Rajan, 1994) and hence it is often much attractive to customers with high-risk profiles. Empirical evidence of Banerjee et al. (2007) confirms Petersen and Rajan (1994) findings. On the basis of such evidence, Banerjee et al. (2007) concluded that some companies prefer to price discriminate their trade credit in order to assist high risk customers reduce their short term financing needs. This improves their profitability through high implicit rate of interest charges. On the contrary, Afrifa (2013)

argues that the firm tend to jeopardise their profitability when they design their trade credit policies aimed at providing short-term financing assistance to high-risk customers since they mostly have a greater propensity to default risk.

Empirical evidence of Emery (1987) suggests that, through the extension trade receivables, firms are able to avoid regulatory and market restrictions, which enhances their profitability. According to Emery (1987), in a highly competitive market, firms are able to intrinsically violate price restrictions and other retaliated effects from other competitors in the market through trade credit extension. Evidence of Bhattacharya (2008) and Petersen and Rajan (1997) reveal that companies that pursue price discrimination using trade credit tend to have improved price-cost margins which lead to higher profitability.

Extension of accounts receivables may also improve a firm's profitability through the reduction in operating and transaction costs (Ferris, 1981). By relaxing the credit period according to Garcia-Teruel and Martinez-Solano (2010), companies are able to reduce the storage costs of the excess inventories accumulated. This argument has been justified by Martinez-Sola et al. (2013) who found that managers can improve profitability by increasing investment in accounts receivables, which is consistent with Hill et al. (2010) and the theoretical models presented by Kim and Atkins (1978), Sartoris and Hill (1981).

3.2.3 Accounts payable and Profitability

Trade payables represent an important source of short term funds for most firms (Garcia-Teruel and Martinez-Solano, 2010; Mian and Smith, 1992; Ng et al., 1999; Wilner, 2000). Peterson and Rajan (1997) stress that trade payables is the single most important source of short term external finance for firms in the United States (US) representing about 35 per cent of medium sized US firms. In the UK, it constitutes about 41 per cent of the total debt for medium size firms and 20 per cent of their liabilities (Garcia-Teruel and Martinez-

Solano, 2010). According to Marinez-Sola et al. (2013), firms tend to have an optimal accounts payable policy due to the existence of market imperfection. This they argued could affect the firms' accounts payable decision and firms' value. However, trade payable has benefits and costs to firms (Nadiri, 1969; Deloof, 2003; Banos-Caballero et al., 2013).

Accounts payable helps to enhance operational efficiency (Ferris, 1981) and profitability through the reduction of transactional cost. Ferris (1981) postulates that delaying accounts payable bring down exchange costs. Other similar studies (Petersen and Rajan, 1997; Nelson, 2002; Banerjee et al., 2007; Bhattacharya, 2008) also argue that by delaying payments, firms are able to increase their profitability through reduce transactional costs of paying bills (Peterson and Rajan, 1997). It also allows companies to accumulate amounts owing and pay them at a periodic interval according to the credit period agreement, such as monthly or quarterly according to Ferris (1981). This helps companies to overcome financial constraint (Schwartz, 1974; Pike and Cheng, 2001) and improve profitability. Mathuva (2010) in a study on the influence of WCM components on corporate profitability on a sample of 30 companies listed on the Nairobi Stock Exchange (NSE) for the period 1993 to 2008 found a positive and highly significant association between accounts payable period and profitability in both the pooled ordinary least square (OLS) and fixed effect (FE) regression models. He argued that firms could increase their profitability by having a longer payable period as they take advantage and use suppliers' credit for their working capital needs. He further suggested that the availability of the cash flow generated through delayed payment may also lead to an increase in investment of accounts receivable and inventory day held which may lead to higher profitability as firms are also able to reduce their transactional cost of paying bills.

Empirical evidence of Falope and Ajilore (2009) on a selected sample of 50 listed companies on the Nigerian Stock Exchange for the period 1996-2005, supports the

argument that firms could also increase their profitability by having a longer payable period since it helps firms to strengthen long-term relationships with their customers. This is consistent with previous studies (Ng et al., 1999; Wilner, 2000).

Accounts payable also enhances the buyer's opportunism from financially distressed suppliers (Petersen and Rajan, 1997; Wilner, 2000) which helps them to improve their profitability. According to the financial distress theory, companies in financial distress often face the challenge of effectively following their credit policies due to their weakening bargaining position. Banerjee et al. (2007) suggests that customer power over supplier arises whereby the customer is relatively large as compared to the supplier such that the business of the customer forms a major part of supplier's revenue. As a result customers are able to exploit the bargaining advantage from their suppliers by obtaining concessions in times when the suppliers are in financial distress (Wilner, 2000). Boissay and Gropp (2007) suggest that in order to overcome the distress from liquidity shortages (shocks), firms tend to take up relatively longer payable period to pass on one fourth of the shock to their suppliers. This according them enhances profitability among these firms. According to Nilsen (2002), during period of economic down turn; some firms substitute the reduction in credit from financial institution for trade credit. Therefore trade credit is used by as a source of "*financing of last resort*" by very constrained firms (Petersen and Rajan, 1997).

Empirical evidence of Raheman et al. (2010) on the relationship between WCM components and corporate profitability of manufacturing sector in Pakistan for the period between 1998 and 2007, covering 204 companies listed on the KSE suggests that lengthening the payment period increases profitability. They argue that with a longer payable period, firms are able to manage and control the quality of the items purchased which helps to reduce the level of the information asymmetry between (Smith, 1987; Long et al., 1993; Pike et al., 2005) and moral hazard problems between the buyer and seller.

This is especially relevant for products or services that take longer to verify (Smith, 1987). Bastos and Pindado (2007) suggest that lengthening the payment period signals product quality which facilitates future sales of the product since it helps eliminate any future contentions of the product as customers are allowed the product before any future payments are made. It also gives customers the opportunity to avoid the time and cost of going through cash refund in a case where the buyer returns the product due to product quality (Garcia-Teruel and Martinez-Solano, 2010a).

Bougheas et al. (2009) also developed a model in which, they demonstrated that in a financial market without bank loans, an increase in production will require lengthening the payment period for any given level of liquidity. A higher production is associated with a higher production cost, which for a given (insufficient) amount of liquidity, implies that the firm will need to take longer payment period. So a longer payment period works as an alternative means to finance production (Ferrando and Mulier, 2013). As a result, some companies rely more on their suppliers than financial institutions for credit to finance their daily operations (Kohler et al., 2000). Therefore the ability of the firms to offer maximum extended payment period to their customers depends on their accessibility to credit from the financial market (Cuñat, 2007). Fisman and Love (2003) extend the analysis to link accounts payable substitutability for institutional financing to the overall development of the financial sector. Evidence from their study reveals that industries that use more accounts payable grow relatively faster in countries with poorly developed financial markets. Previous studies (Schwartz, 1974; Emery, 1984; Garcia-Teruel and Martinez-Solano, 2010a) suggest that firms with adequate access to credit from the financial markets are in a better position to act as intermediaries by borrowing from financial institutions and lending it to clients in the form of accounts payable. Antov and Atasanova (2007) on the other hand argues that, the use of trade credit also creates better conditions to obtain

institutional loans and also contribute to lower total borrowing costs. Most firms often tend to use their suppliers and accounts payables as either third-party guarantees or security to secure institutional loans from financial institutions (Miwa and Ramseyer, 2005).

On the contrary delaying accounts payable could incur credit management cost to the buyer (Cheng and Pike, 2003), which eventually affects the firms' profitability. According to Bougheas et al. (2009) and Garcia-Teruel and Martinez-Solano (2010b) firms in an attempt to reduce the various cost associated with making the payments, trade credit information and monitoring tend to relax their credit period which invariably is transferred to the buyer in the form of additional administrative costs (Mian and Smith, 1992) due to the costly credit management activities. This inevitably affects the profitability of the buyer. According to Ng et al. (1999), the transaction costs associated with making the payments, trade credit information and monitoring are incurred when informational asymmetries between buyer and seller are present.

Garcia-Teruel and Martinez-Solano (2010) argue that firms risk losing their profitability when they over-invest in accounts payable due to the high cost of investment in current assets which sometimes also signal acceptance of late-paying customers. It may also involve bearing the credit risk which may have negative effects on profitability and liquidity because of debt defaults (Cheng and Pike, 2003).

Ng et al. (1999) argued that firms that wait longer before settling their supplies often tend to lose discounts for early payment. This sometimes affects their profitability as the amount of cash discount can sometimes be substantial leading to some firms facing a high opportunity cost due to the loss of discount and the high inherent cost involved in credit period. Therefore, the decision to accept or request for credit period results in an inherent cost to a company, which diminishes profitability. According to Deloof and Jegers (1999),

through early payments, firms tend to forgo cash discount usually offered by suppliers which often tend to be a substantial amount (Ng et al., 1999). For instance, Ng et al. (1999) found that a credit term of 2/10 net 30 could define an implicit interest rate of 43.9 per cent to the buyer.

Tauringana and Afrifa (2013) in their work on a sample of listed SMEs in the UK found the management of accounts payable (AP) to be important for SMEs profitability management. They suggested that by reducing the accounts payment period, firms could enhance their profitability. However they further argued that in working capital management, SMEs are better off focusing on accounts payable management if firms want to enjoy the advantage of holding a positive cash flow holding. This includes: reducing the cost of financial distress, taking advantage of positive speculation and growth opportunities, meeting the day to day operational expense and also providing insurance against shortfalls in cash.

On the contrary, some group of studies on the relationship between working capital management and profitability found a negative association between accounts payable period and profitability. For example, Garcia-Teruel and Martinez-Solano (2010) argue that firms risk losing their profitability when they over-invest in accounts payable due to the high cost of investment in current assets which sometimes also signal acceptance of late-paying customers. Besides, if the cash discount and the credit period granted by the firm are not competitive compared to firms in the same industry, this can have negative effects on the value of the firm.

In another study, Garcia-Teruel and Martinez-Solano (2007) adopted a panel of small to medium-size enterprises in Spain to find a significantly negative relation between an SME's profitability and the number of day's accounts receivable and days of inventory.

They suggested that managers can create value by reducing the number of days for which their accounts are outstanding. Samiloglu and Demirgunes (2008) analysed the effect of WCM on company profitability of a sample of companies consisting of Istanbul Stock Exchange (ISE) listed manufacturing companies for the period of 1998 to 2007. Their conclusion was that the negative relationship between accounts receivable period and profitability may be due to the fact that customers want more time to assess the quality of products they buy from companies with declining profitability.

3.2.4 Inventory management and Profitability

Inventory as a component of Working Capital Management (WCM) is very important to the profitability of firms (Koumanakos, 2008). Under perfect conditions, firms will not have to keep inventory (Mathuva, 2013) as they will be required to produce in exact quantities to satisfy sales demand. However, due to imperfections companies are forced to keep inventory in order to safeguard any eventualities. Existing studies (e.g., Gill et al., 2010; Ching et al., 2011; Eroglu and Hofer, 2011a) have demonstrated that a firm's profitability is affected by the amount of inventory held. Eroglu and Hofer (2011b) suggest that firms manage inventory in an anticipation of enhancing profitability. Firms could adopt two main inventory management strategies: the aggressive inventory management strategy, where a lower amount of inventory is held or the conservative inventory management strategy where a higher level of inventory is maintained (Garcia-Teruel and Martinez-Solano, 2007; Nazir and Afza, 2009; Weinraub and Visscher, 1998). According to Tauringana and Afrifa (2013), the type of inventory management strategies chosen could either increase or decrease the profitability of a firm, depending on the availability of resources including expertise, technology, finance.

A number of studies (Nazir and Afza, 2009; Weinraub and Visscher, 1998) have suggested that a reduction in inventory through the aggressive strategy may increase profitability. This is because a decrease in inventory will lead to the reduction in the various cost associated with the holding of inventory. The theoretical basis of this evidence is embedded in the Just-In-Time (JIT) theory of inventory management which regards the holding of inventory in any form as a waste because it does not add value to the product (Bhattacharya, 2008; Morgan, 1991). As a result, the theory suggests the need for the firm to hold zero inventory level and only orders for materials when they are necessary to manufacture the products. This avoids the cost of holding inventory, which allows companies to enjoy higher profitability. Zero inventory holding periods will mean that the company only order for materials needed to manufacture the specific product. This, however, allows the company to avoid any extra cost of holding the inventory (Hsieh and Kleiner, 1992).

According to Younies et al. (2007), the best way to successfully implement such a system is through developing a strong buyer-supplier relationship. Previous studies (Johnson, 1986; Giffi et al., 1990; Schaffer and Themson 1992; Sohal et al., 1993; Balakrishnan et al., 1996; Ahmad and Pletcher, 2004) have demonstrated that some companies have successfully benefited significantly in terms of cost savings and profitability after successfully implemented the JIT system.

Empirical evidence of Johnson (1986) suggested that Hewlett-Packard and General Motors had their inventory cost reduced by more than 50 per cent and from \$8 billion to just \$2 billion respectively. Dong and Su (2010) in their study on the relationship between working capital management and profitability among Vietnamese firms found a significantly negative relationship between inventory in number of days and profitability. They suggested that by holding high amount of inventory, firms profitability is reduced

due to the holding cost (e.g., security cost, rent, heating, obsolescence and theft) of the inventory. Mathuva (2013) had similar evidence and further suggested that firms should focus on minimising their inventory level since high inventory level consumes space and creates financial burden to firms. According to Drury (2000), the opportunity to reduce overheads and capital employed can be achieved through inventory reduction.

In a similar study, Banos -Caballero et al. (2010) suggest that lower level of inventory may increase profitability because the funds not tied up in inventory can be deposited in the bank to earn interest or invested elsewhere. According to Deloof (2003), managers can create value for their shareholders by reducing the number of inventories days to a reasonable minimum. This prevents the firm from seeking short-term credit in order to finance the investment in inventory. Other studies (Boute et al., 2004; Chen et al., 2005; Shah and Shin, 2007) found a significantly negative relationship between inventory in number of days and profitability.

Contrary to the above evidence, the conservative working capital management strategy suggests that an additional investment in working capital stimulates profitability through increased sales (Deloof, 2003). The theoretical basis for this strategy is derived from the precautionary, speculative and transactional motive theory of holding inventory. The precautionary motive theory of holding inventory suggests that, companies keep inventory as a precaution against situation of stock out (Christiano and Fitzgerald, 1989; Wen, 2003). According to Bhattacharya (2008), the situation of stock out not only drives customers to other competitors but also leaves a bad name for the company. Lack of inventory will drive both current and potential customers away to competitors which will have a negative impact on profitability. The theory predicts a higher profitability as a result of an increase in inventory because of the uncertainty in the lead-time of delivery (Modigliani, 1957). Compared to any other theories explaining inventory behaviour, Wen (2003) suggests that

the theory of stock avoidance holds more truth. Empirical evidence of Gill et al. (2010) on the relationship between working capital management among American firms suggested a high level of inventory averts trading interruptions, which could contribute to profit maximisation for firms due its inherit cost.

On the other hand, speculative motive theory of inventory holding, firms hold inventory with the sole purpose of achieving higher profitability through future abnormal future profit (Christiano and Fiszgerald, 1989). The theory suggests that firms often hold inventory with the expectations of taking advantage of higher future price changes of the products. Some companies may even hoard their inventories to reap abnormal profit if they anticipate a future rise in prices of their products. In such circumstances, the cost of holding inventory is often being compensated for by the future expected rise in prices of the products.

Empirical evidence of Hill and Sartoris (1992) suggests that, the condition of holding higher inventory with the expectation to take advantage of higher future price changes works more effective under inflationary conditions. For instance, according to Morgan (1991), in the late 1970's and early 1980's, some companies were motivated by the rapid inflationary pressures to stock up their inventories early before prices rose so as to take advantage of any future abnormal future profit. Blazenko and Vandezande (2003) also found a significantly positive coefficient on gross margin regressed as a determinant of finished goods inventories in their study on the effects of stock out avoidance and market competition on corporate holding of finished goods inventories. They argue that firms are more inclined to hold inventory with the expectations of taking advantage of higher future price changes of the products if the potential for profit is greater. This argument is consistent to the speculative motive theory of holding inventory.

Finally, under the transactional cost motive of holding inventory, companies hold inventory to satisfy the expected demand of the goods or services of the company. According to the theory, management envisage the future sales demand and hence keep inventory to meet the said demand. According to Bhattacharya (2008), some companies also keep inventory for display or demonstration purposes since some customers often prefer to examine the product before placing any order. This could result in an increase in profitability as there will be product samples available for inspection, thereby enticing customers to purchase.

Modigliani (1957) suggests that some companies keep inventory for the purpose of meeting the cost of procurement. He argued that due to the economies of bulk procurement, some companies tend to hold inventories very often. For instance, a company could benefit from bulk purchase through quantity discount from its suppliers. It could also save the company some money in terms of transportation cost. It will also save the company from the fixed cost of ordering including placing and processing orders (Afrifa, 2013). Mehta (1974) found a relation between inventory procurement and rate of sales. Results of the Mehta (1974) study suggest that as the rate of sales rises, inventory also increases. Mehta therefore argues that companies should be willing to buy in bulk at the same rate of increase in sales. Afrifa (2013) also suggested the need for companies to employ some mathematical formulas such as economic order quantity (EOQ) to be able to purchase quantities that achieves the dual purposes of reducing both ordering cost and holding cost.

Previous studies (e.g., Padachi, 2006; Nobanee, 2009) all support the relevance of transactional cost theory of inventory holding in maximising profitability for firms. Evidence from these studies suggest that firms keep a high level of inventory in order to satisfy the expected demand of production (Bhattacharya, 2008) which in the long run

improves the firms profitability. On the other and, Vastag and Whybark (2005) found no significant relationship between inventory turnover and profitability. Similarly, Demeter (2003) and Tunc and Gupta (1993) showed that inventory turnover did not affect return on sales and level of sales respectively. Also, Padachi (2006) in a study on a sample of small manufacturing firms in Mauritius during 1998 to 2003 did not find any significant relationship between inventory holding period and profitability.

3.3 CONTROL VARIABLES

Apart from working capital management, there are other variables that have been found to influence profitability of firms such as corporate governance and company characteristics. These control variables are discussed below.

3.1.1 Corporate Governance and Profitability

3.1.1.1 Board Size

Ntim (2013) contends that conformance and performance are the two most important strategic functions of a corporate board. According to the study, a company's board has the responsibility to monitor, ensure compliance, discipline and also that the interests of shareholders is pursued by managers. It has the responsibility to provide expert advice to the CEO and access to critical information and resources (Jensen, 1993; Jensen and Meckling, 1976) to ensure profitability.

Empirical studies (e.g., Yermack, 1996; Mak and Yuanto, 2003; Anderson et al., 2004; Guest, 2009) on the relationship between board size and profitability have demonstrated that a firm's performance measured by profitability is affected by the size of a company's board. A number of studies (reviewed below) appear to support the view of a negative relation between board size and corporate profitability. According to Ntim (2013), as the

board size increases, there is always the tendency for directors to engage in free-riding and shirking of responsibilities also leading to lower managerial monitoring and performance. Over time, larger boards tend to become inefficient and are unable to facilitate key board functions effectively due to coordination and communication problems as it becomes more difficult to arrange board meetings and reach consensus, which eventually leads to slower and less-efficient decision-making (Jensen, 1993; Lipton and Lorsch, 1992).

Guest (2009) investigated the impact of board size on the performance of 2,746 listed companies in UK over 1981-2002 and document a strong negative relationship between board size and three different measures of performance (performance Tobin's Q and share returns). Similar studies (e.g., Cheng, 2008; Coles et al., 2008) also found a significant negative relationship between board size and the performance. Loderer and Peyer (2002) documented a significantly negative impact on Tobin's Q (although not on profitability) while Conyon and Peck (1998) find a significant negative effect of board size on both market to book value and profitability among 481 listed UK firms.

On the other hand, a number of studies (e.g., Uadiale, 2010; Adams and Mehran, 2003; Mangena et al., 2010; Kajola et al., 2008) also document a positive relationship between board size and performance measured by profitability. The theoretical argument to support these findings suggest that companies with large board size are able to enjoy a lot of valuable advice from a large number of board members (Dalton and Dalton, 2005). According to Lehn et al. (2004), larger boards have the advantage of enjoying a large amount of collective information which is also valuable for the monitoring function of the board.

Many directors mean that there will be diversity of specialisation, which can enhance the decision-making processes within the company. The diversity of specialisation could help

companies to secure critical resources and also reduce environmental uncertainties (Goodstein et al., 1994). Furthermore, it makes it easier to create committees within the company for the effective execution of duties and responsibilities (Bathula, 2008). These communities are able to sub-divide the duties and responsibilities on the lines of specialisation and expertise so as to ensure effectiveness and efficiency, which may maximise profitability. Previous researchers (e.g., Uadiale, 2010; Adams and Mehran, 2003; Mangena et al., 2010; Kajola et al., 2008) have also found a positive relationship between profitability and company board size.

3.3.1.1 Chief Executive Officer (CEO) Tenure

CEO tenure is an important component to organisational performance and executive leadership. However, the association between CEO tenure and performance is theoretically and empirically shared by many studies (Miller and Shamsie, 2001). It is argued that CEOs that spent a long time in their post often resort to empire building. A CEO with a lengthy time in a company will become more comfortable and will use his or her power and knowledge gained to seek their own interest at the expense of profitability. It may also lead to CEO entrenchment. This entrenchment results from the fact that a long tenured CEO may dominate the board, which will lead them to pursue costly projects that can jeopardise a company's profitability. Shen (2003) maintain that CEOs spent a lot of time to achieve success in their work and that the ability of a CEO will increase with time. It means that their increased ability will have a positive influence on profitability. As suggest by Gabarro (1987), new CEOs normally require one or two years to acquire the needed task knowledge to be able to take major decisions. Also, as a CEO stays in an office for long, it helps him or her to acquire company specific knowledge that helps to maximise profitability. Shen (2003) argues that CEOs continue to accumulate task knowledge and also sharpen their leadership skills with time. Longer tenured CEOs are motivated to improve profitability

because they have the benefit of seeing the results of decisions taken (Kyereboah-Coleman, 2007b).

Another profitability enhancement of longer CEO tenure is that it leads to lower monitoring cost, which may show in improved profitability. Due to the unproven abilities of New CEOs, they tend to be closely watched by management. This results in substantial monitoring cost at the expense of profitability. On the contrary it is shown that because new CEOs are keenly watched, it actually propels them to achieve higher profitability. This higher performance stems from the fear of been dismissed, because research has shown that CEO dismissal is acute during the first five years in office (Shen and Cannella, 2002). Bergh (2001) finds a significantly positive relationship between CEO tenure and profitability.

On the other hand, it is argued that a CEO that has spent a long time at his or her post will resort to empire building. A CEO with such a lengthy time in a company will become more comfortable and will use his or her power and knowledge gained to seek his or her own interest at the expense of profitability. It may also lead to CEO entrenchment. This entrenchment results from the fact that a long tenured CEO may dominate the board, which will lead him or her to pursue costly projects that can jeopardise a company's profitability. He or she may also use such power and domination to ask for higher compensation package at the expense of profitability (Hill and Phan, 1991; Allgood and Farrell, 2003).

Hermalin and Weisback (1998) developed a model, which proved CEO domination over the board, as a result of long tenure. This model predicted that board independence actually declines over the course of a CEO's tenure. A long tenured CEO may have the opportunity to influence the selection of directors (Zajac and Westphal, 1996). This opportunity will offer him or her advantage of choosing directors who are sympathetic, which will afford

him or her ability to exert own influence and discretion that may minimise profitability. Another negative effect of longer CEO tenure stems from the fact that it results in the board becoming more relaxed and less vigilant in monitoring the CEO (Lorsch and MacIver, 1989; Coles et al., 2001), which may decrease profitability. Empirical studies by Hambrick et al. (1993) and Farooque et al. (2007) found a significantly negative relationship between CEO tenure and performance.

3.3.2 Company Characteristics and Profitability

3.3.2.1 Company Size

Haniffa and Hudaib (2006) suggest that firm size may be related to firm performance. Large firms can exploit economies of scale and scope and thus being more efficient compared to small firms. According to Hardwick (1997), larger companies tend to enjoy economies of scale in the form of operating cost and the cost of innovation, which reduce the unit cost of production leading to increase profitability. Shepherd (1986) also suggested that company size determines its bargaining power. Thus companies with superior bargaining power, tend to be more profitable as such companies are able to influence their trading relationship in terms of the amount of credit granted, terms of payment, quality of the products and even the means of delivery. It is, however, suggested that larger firms tend to have superior bargaining power over their suppliers and often tend to dictate the amount of credit granted, terms of payment and the quality of the suppliers' product. This, however, helps these firms to be more profitable. In addition, small firms may have less power than large firms; hence they may find it difficult to compete with the large firms particularly in highly competitive markets (Majumdar, 1997) since larger firms have more advanced and sophisticated marketing skills, research capabilities and product development experience, which together form the foundation higher profitability (Dewar and Dutton, 1986).

According to Yang and Chen (2009), larger firms have preferential treatment over smaller firms in terms of cost of credit from financial institutions, a pool of qualified human capital and are able to achieve greater strategic diversification over their smaller counterparts. This according to them makes larger firms less prone to failure and also assists them in exploring other profitable ventures which improves profitability. Besides they have the monetary resources to recruit highly skilled personnel to propel their strategic objectives. Current research (Majumdar, 1997; Inmyxai and Takahashi, 2010; Kakani and Kaul, 2002) on the relationship between firms' profitability and size all found a positive relationship suggesting that larger firms tend to be more profitable than smaller firms. Empirical work of (Mathuva, 2010; Padachi, 2006) confirm this argument.

3.3.2.2 Financial Leverage

The financial leverage has a significant effect on companies' profitability (Ruland and Zhou, 2005). The presence of debt in the capital structure raises the pressure on managers to perform (Akintoye, 2008). Other studies (e.g., Higgins, 1977; Miller, 1977; Dhaliwal et al., 2005) have argued that firm's financial leverage affects the cost of capital which ultimately affects stock prices and profitability of firms. According to some studies (e.g., Kim, 1997; Sheel, 1994; Sunder and Myers, 1999; Titman and Wessles, 1988; Upneja and Dalbor, 2001), firms need to strike a trade-off between the financial cost of borrowing and their interest tax shields when formulating decisions on the firms' capital structure.

Sunder and Myers (1999) contend that firms with lower debt ratio often tend to be more profitable contrary to the prediction of the trade-off theory. Dann (1981) and James (1987) attribute the abnormal positive returns of firms to leverage increasing events (stock repurchases or debt-for-equity exchanges) than leverage – decreasing events (stock issuing). According to Titman and Wessels (1988), since firms with lower levels of

leverage tend to use their earnings before seeking capital outside, they tend to be more profitable. According to Wald (1999), profitability, which is the most significant determinant of firms' financial leverage, negatively affects the debt to asset ratios in the heteroskedastic Tobit regression model. Dimitrov and Jain (2005) found a negative association between financial leverage and profitability. Mathuva (2010) included financial leverage as one of the control variables in establishing the influence of WCM components on corporate profitability. The results showed a negative association between financial leverage and profitability. Samiloglu and Demirgunes (2008) introduced company size and financial leverage as control variables when they investigated the effect of WCM on firm profitability in Turkey. The results indicated a significant negative association between financial leverage and profitability. In a study by Christopher and Kamalavalli (2009) on the sensitivity of profitability to WCM among 63 Indian corporate hospitals also found a negative effect of financial leverage on profitability. However, Padachi (2006) also found a negative association between leverage and firms profitability.

3.3.2.3 Liquidity Ratio

The level of liquidity within a company may greatly influence profitability. A company that has more liquidity may have the capability of extending more credit to its customers. High liquidity may also hinder a company's profitability (Ng and Baek, 2007). Boermans and Wiilbrands (2011) contend that a firm's profitability is significantly influenced by its level of liquidity since the availability of liquidity allows the firm to meet its short term obligations on time and also take up profitable ventures. A company that has more liquidity may have the capability of extending more credit to its customers. The offering of credit may increase sales because it can entice customers to buy more, which will maximise profitability (Garcia-Teruel and Martinez-Solano, 2010c; Gill et al., 2010). The level of liquidity within a company can help avoid the use of costly external finance. A

considerable evidence exist to suggest that internally generated finance is cheaper than external finance because of the problems of information asymmetry, which manifest itself in the form of adverse selection and moral hazard (Myers and Majluf, 1984; Brito and Mello, 1995). The liquidity of a company may be an indication that a company is forgoing the benefits of investing in profitable opportunities. High liquidity may also result in managers misappropriating the funds of the company.

According to Jensen (1986), managers have incentives to increase the free cash flow of their companies because it is probably the only one asset they can freely control. Damodaran (2005) argue that managers have their own agenda to pursue and that cash provides them with the ammunitions to fund these pursuits. In addition, Lartey et al. (2013) argue that holding a significant amount of liquid assets negatively affects the firms profitability as it impose an opportunity cost on the bank given their low return relative to other assets. In summary, it can be argued that a high level of liquidity may decrease profitability. Tauringana and Afrifa (2013) found a negative association between liquidity and profitability. Bourke (1989) suggests a positive relationship between liquid assets and profitability in their study on 90 European, North American and Australian.

3.3.2.4 Asset Tangibility

Another important determinant of profitability is tangibility of the firm's assets (Campello, 2005). Bhagat et al. (2005) suggest that companies with fewer tangible assets face information asymmetry, when communicating their value to outside investors as a result they are likely to face financial constraints. This in effect affects their profitability (Baños-Caballero et al., 2013). Asset tangibility offers credibility to investors' threat to take the firm to bankruptcy court and/or to dismiss its management team, affecting incentives to

perform (Campello, 2005). According to Hart (1995), non-human assets help in holding a relationship together.

Braun (2003) maintains that tangible assets are those that would more easily shift to the investor's control when the relationship breaks down. For most external financiers, the best way to guarantee safe lending is through the provision of security which in most case for firms, tangible assets which could be reposes in an event non-payment of the credit. Research by Haris and Robinson (2001) found a negative relationship between firms' profitability and tangible assets. On the basis of this evidence, they argued that firms need higher proportion of intangible assets such as human capital in order to use the resources with maximum effectiveness since intangible assets such as human capital, R&D, organisational capital and goodwill can help the firm to create new products and processes (Teece and Pisano, 1998). Empirical evidence of Onaolapo and Kajola (2010) also found a negative association between asset tangibility and profitability. Deloof (2003) found a positive association between asset tangibility and profitability.

3.3.2.5 Cash flow

Cash flow is also very important to companies because it allows them to pay bills on time. The availability of cash flow may improve corporate profitability by reducing the transaction costs of raising funds (Peterson and Rajan, 1997). With available cash flow holdings, firms can afford lengthy cash conversion cycle, which can improve company profitability by increasing sales (Deloof, 2003). It is also argued that cash flow availability allows a company to extend more credit to customers, which may entice them to purchase more, even in times of low demand (Emery, 1987). The availability of cash flow may also lead to an increase in investment in accounts receivable and inventory days held, which

could enhance higher profitability through reduction in the transactional cost of paying bills.

Ferris (1981) suggests that larger inventories can reduce supply and collection cost on the firm as both suppliers and customers in the long run work towards better time management for delivery / payment to optimise both inventory and cash levels (Paul and Boden, 2008). For instance, a buyer might prefer to pay his debt monthly instead of immediate payment cycle from the delivery schedule (Peterson and Rajan, 1997). Firms are able to reduce the cost of warehousing particularly when the customer has the ability to carry the inventory. Similarly, with available cash holdings, firms could take advantage of available discounts of buying in bulk, which may reduce the procurement cost of production and the cost of sales of the product, which will reduce the overall price of the product leading to more profitability.

3.3.2.6 Growth opportunities

Growth opportunities could also affect the firm's profitability, as has been shown in various studies (Deloof, 2003; Shin and Soenen, 1998). It is generally accepted that stock returns reflect the company's growth opportunities. As is often argued, growth looks like a necessary ingredient for corporate profitability and the creation of shareholder value (Shin and Soenen, 1998). Deloof (2003) found positive association between growth opportunity and profitability.

3.3.2.7 *Industry classification*

Many theoretical perspectives have long recognised the importance of industry membership for company profitability (Rumelt, 1991; McGahan and Porter, 1997; Short et al., 2007). For example, it has been found that companies belonging to the same industry exhibit similar profitability profiles whilst those in different industries exhibit different

profit margin. According to Porter (1980), the differences in profitability levels of companies within an industry depends on the bargaining power between the supplier and customer. In an industry with few suppliers, but many customers, suppliers may enjoy enhanced profitability by dictating to customers; such as determining the price of the products and even the terms of credit to be offered.

On the other hand, an industry with many suppliers, but few customers may see profitability plummeting because customers tend to dictate the terms of engagement. Profitability level of companies within an industry may be impaired if there are not enough entry barriers available. Also, the availability of substitute products may negatively affect profitability because it will reduce the market share of companies within an industry. The level of competition within an industry may also impair upon companies profitability. Intense competition may cause profitability to drop because of the level of infighting. However, companies in a low competitive industry may boost profitability because they can take initiatives without retaliation from other companies. It is suggested that the industry belonging explains between 17 per cent and 20 per cent of profitability variance (Schmalensee, 1985; Wernerfelt and Montgomery, 1988; Rumelt, 1991).

3.4 SUMMARY OF PREVIOUS RESEARCH

Table 1.1 below summarises content analysis of previous studies on working capital management. The table has been divided into six columns, with column one detailing the author(s) name and year of publication, column two shows the country of study, column three indicates the aim and the main methods used, column four shows the sample size, column five reports the variables adopted for the study and finally, column six records the outcome of each study.

Table 1.1. Summary of content analysis of previous studies on the relationship between working capital management and profitability

Author(s) Year	Country	Aim and Main method	Sample	Variable	Main finding: negative(-) positive(+)
Jose et al. (1996)	America	<ul style="list-style-type: none"> Relationships between profitability and WCM in a large sample of firms; Correlation and regression analyses 	2718	<ul style="list-style-type: none"> CCC 	-
Wang (2002)	Japan/Taiwan	<ul style="list-style-type: none"> Working capital management and profitability Regression analyses (Cross-sectional regression) 	1555	Cash conversion cycle Sales growth	- +
Deloof (2003)	Belgium	<ul style="list-style-type: none"> WCM and the profitability of Belgian firms Statistical analyses Correlation and regression analyses 	1009	Accounts receivable Inventories Accounts payable Cash conversion cycle Log of sales Sales growth Financial debt Fixed financial assets	- - - - + + + - +

<p>Amir Shah and Sana (2006)</p>	<p>Pakistani</p>	<ul style="list-style-type: none"> WCM and the profitability of Oil and Gas sector of Pakistan Correlation Regression analyses 	<p>7</p>	<p>Gross operating income Accounts receivable Accounts payable Inventories</p>	<p>- - - -</p>
<p>Lazaridis and Tryfonidis (2006)</p>	<p>Athens</p>	<ul style="list-style-type: none"> Relationship between WCM and the profitability Regression analysis 	<p>131</p>	<p>Debtors control period Cash conversion cycle period Payment control period Inventory control Financial debt Fixed financial assets</p>	<p>- - - - + -</p>
<p>Garcia-Teruel and Martinez-Solano (2007)</p>	<p>Spain</p>	<ul style="list-style-type: none"> WCM and the profitability of Spanish SMEs Statistical analyse Correlation and regression analyses 	<p>8872</p>	<p>Accounts receivable Accounts payable Inventory control period Cash conversion cycle Firm size Sales growth Leverage</p>	<p>- - - - + + -</p>

<p>Raheman and Nasr (2007)</p>	<p>Pakistan</p>	<ul style="list-style-type: none"> • Working capital management and profitability • Regression analysis (OLS) 	<p>94</p>	<p>Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Current Ratio Debt Ratio Financial assets to Total Assets</p>	<p>+ - + - - - -</p>
<p>Zariyawati et al. (2009)</p>	<p>Malaysia</p>	<ul style="list-style-type: none"> • The relationship between WCM components and corporate profitability • Regression 	<p>1628</p>	<p>Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Current Ratio</p>	<p>- - + + -</p>

Abuzayed (2012)	Jordan	<ul style="list-style-type: none"> Working capital management and firms' performance in emerging Markets Fixed Effect Regression 	93	Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Current Ratio Debt Ratio Firm size	+ + + - + + +
Falope and Ajilore (2009)	Nigeria	<ul style="list-style-type: none"> WCM and the profitability of a sample Nigerian firms Pooled regression 	50	Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Current Ratio Debt Ratio Firm size Sales growth	- - + - + + + +

<p>Sen and Oruc (2009)</p>	<p>Turkey</p>	<ul style="list-style-type: none"> • The relationship between working capital management and profitability • Regression analysis (Fixed effect) 	<p>49</p>	<p>Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Current Ratio</p>	<p>- - + - -</p>
<p>Dong and Su (2010)</p>	<p>Vietnam</p>	<ul style="list-style-type: none"> • WCM and the profitability of Vietnamese firms • Correlation and regression analyses 	<p>130</p>	<p>Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Debt Ratio Firm size Sales growth</p>	<p>- - + - + + +</p>
<p>Nobanee et al. (2009)</p>	<p>USA</p>	<ul style="list-style-type: none"> • The relationship between working capital management and profitability • Correlation and regression analyses Generalized Method of Moments (GMM) 	<p>5802</p>	<p>Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Current Ratio Debt Ratio</p>	<p>- - + - + -</p>

Mathuva (2010)	Kenya	<ul style="list-style-type: none"> WCM components and profitability in Kenyan listed firms Regression analyses (Pooled OLS & Fixed effect) 	30	Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Debt Ratio Firm size Age	– + + – + + +
Charitou et al. (2010)	Cyprus	<ul style="list-style-type: none"> Working capital management and profitability Random effect regression 	43	Cash conversion cycle Debt Ratio Firm size Sales growth	+ – + +
Taurigana & Afrifa (2013)	UK	<ul style="list-style-type: none"> Relative importance of working capital management its components to SMEs' Profitability 	133	Average collection period Inventory Turnover in days Accounts payable Cash conversion cycle Debt Ratio Firm size	– – – – – +

<p>Banos-Caballero et al. (2013)</p>	<p>UK</p>	<ul style="list-style-type: none"> • Working capital management, corporate performance and financial constraint • Regression and two-step generalized method of moments (GMM) 	<p>258</p>	<p>Net trade cycle Leverage Ratio Firm size Sales growth</p>	<p>– + – +</p>
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3.5 LIMITATIONS OF EXISTING RESEARCH AND NEED FOR FURTHER RESEARCH

One of the major limitations of existing research, which warrant the need for further research, is that existing studies (e.g., Shin and Soenen, 1998; Deloof, 2003; Martinez-Sola et al., 2013; Tauringana and Afrifa, 2013) have made a number of both theoretical and empirical contributions on the relationship between working capital management (WCM) and profitability without considering the potential dynamic effects. Existing research has not investigated whether the effect of WCM and its components (AR, AP and INV) on profitability may be contingent on organisational contingencies (environment, resources and management) of the firm as postulated by contingency theory.

A number of studies indicate that firms change their policy over time as they adjust to the demands of their environment (Ambrosini et al., 2009; Rueda-Manzanares et al., 2008) and their resource (Mol and Wijnberg, 2011) and management capabilities (Luo et al., 2013) in order to positively influence profitability. For example, according to the structure-conduct-performance (SCP) model, the degree of concentration in an industry determines firm behavior and profitability. This is because higher concentration enables collusion between firms, which leads to higher profits. It has also been suggested that exogenous characteristics, such as industry concentration often results in barriers to entry for new firms and enables established firms to share industry profits (Porter, 1980). According to evidence from the resource based value theory of the firm, performance differentials are produced by resource heterogeneity among competing firms (Peteraf, 1993; Hoopes et al., 2003). Moreover, it has also been suggested that firm profitability depends on internal

matters such as its management policy, which also depends on the structural characteristics of the industry, stakeholders and size (Spanos et al., 2004; Darnall, 2009).

Also, one of other major limitations of existing research is the conflicting result. While some studies suggest that high level of working capital may improve profitability by stimulating sales (Banos-Caballero et al., 2010), preventing production interruptions (Tauringana and Afrifa, 2013), strengthening long-term relationships with customers (Ng et al., 1999), and influencing the acquisition of merchandise at times of low demand (Emery, 1987), others advocate that minimising the investment in working capital may result in higher profitability (Deloof, 2003; Banos-Caballero et al., 2013) because of lack of finance in general and the expensive nature of external finance in particular (Banos-Caballero et al., 2013). Autukaite and Molay (2011) argue that effective WCM leads to a reduction in a firm's risk, which attracts cheaper financing from both shareholders and lenders. Ganesan (2007) asserts that reducing the requirement in working capital reduces the need for financing and cost of capital, so increasing the cash available to shareholders. The varying explanation for the direction of the association between WCM and profitability suggests that an optimal working capital level may exist at which the profitability of the firm is maximised (Banos-Caballero et al., 2012) and therefore there is need for further research.

The current research is also limited because research evidence on the relationship between WCM and profitability in UK, where current knowledge and understanding is limited in view of the fact that late payment problems have been identified as a main source of business failure (Wilson, 2008). The few existing studies (Howorth and Westhead, 2003; Tauringana and Afrifa, 2013) that have investigated this area have primarily focused on smaller firms. The relationship between WCM and profitability may differ among large UK listed companies since Wilson (2008) suggests that large firms tend to use their market

power to exploit their ‘dominant’ positions as buyers in competitive supply markets by taking ‘extended’ trade credit and thus leveraging their own profit and cash-flow.

3.6 SUMMARY AND CONCLUSION

This chapter examined the relationship between WCM and profitability. It presented the interrelationship between working capital, its components and corporate profitability. The rationale was to demonstrate how the lack of consistency from present empirical evidence of the impact of working capital on firm profitability has necessitated the need for new evidence. It started with the discussion of how WCM (measured by CCC) and its components (AR, AP and INV) affect profitability of the firms. This was followed a discussion of how WCM (measured by CCC) and its individual components (AR, AP and INV) affect profitability of the firms. These variables have been included in the study in order to prevent any possibility of omitted bias (see Bartov et al., 2000)

CHAPTER FOUR

TOWARDS A CONTINGENCY THEORY OF WORKING CAPITAL MANAGEMENT

4.1 INTRODUCTION

This chapter reviews the theoretical underpinnings of the relationship between working capital management, its contingencies and profitability. It adopts the contingency theory as leading theoretical framework to enable prior identification of the main research questions and independent variables to direct the research. The rest of the chapter is structured as follows. Section 4.2 explores the various theories under the contingency theory. Section 4.3 examines the concept of fit and misfit in contingency models. A final conclusion of the study is presented in section 4.4.

4.2 CONTINGENCY THEORY FRAMEWORK

The contingency theory gains its roots from the functional sociological theory perspective of organisational structure, which offers cogent explanations on the interrelationships among organisational sub-systems as well as between the organisational system and its environment (Fridman and Ostman, 1989). According to the theory, no single type of organisational strategy is equally applicable to all organisations (Islam and Hu, 2012), in other words, according to Scott and Cole (2000), there is no one best way to design an organisation within the contingency framework. Flynn et al. (2010), suggests that it is the environment that organisations operate that shapes their structures and processes. According to the theory, organisations need to adopt their systems and structures to be congruent with the various contingencies or circumstances of their external environment in order to enhance profitability. In other words, according to Burrell and Morgan (1979), the more an organisation is able to deal with the demands of the environment organisation

interact with, the better the performance. Therefore organisation performance depends on the extent to which the strategy that it seeks to pursue is aligned with the demands of its environment (Flyn et al., 2010). Such an alignment between profitability and strategy is described in earlier studies (Van de Ven and Drazin, 1985; Venkatraman and Prescott, 1990; Milgrom and Roberts, 1995) as “fit” in the literature of strategic management. It is interpreted as the interactive effect of organisational structural variables on profitability (Van de Ven and Ferry, 1980). When a firm’s structural variable fits at a level that is equal to its organisational contingencies, profitability is enhanced and vice versa (Donaldson, 2001). The better the fit, the more effective the organisation becomes (Zona et al., 2012).

Various theoretical and empirical studies on board management (Mangena, et al., 2012; Zona et al., 2012), accounting systems (Waterhouse and Tiessen, 1978) and marketing (Zeithaml and Zeithaml, 1988) have adopted the contingency framework. The framework in recent years maintained its popularity with many studies focusing on the use of common contingency variables – such as environment, technology, size, structure, strategy and national culture (Chenhall, 2003). Donaldson (2001) categorised these contingencies except size into organisational tasks and named these tasks as task uncertainty and task interdependence, which along with size became the underlying contingencies in the literature of structural contingency. He further argued that each organisation varies depending on the level of these contingency factors and on corresponding structural variables. For instance, as size increases, so is the fitting structure more bureaucratic (i.e., has many departments, many hierarchical levels, high specialisation, high formalisation, and low centralization). Therefore as task uncertainty increases, the fitting structure becomes less formalised and more decentralized - it also features structures to coordinate between functional departments such as project teams. Also as diversification increases, so is the fitting structure divisionalised, which raises the degree of bureaucratic structuring.

Hence, he concluded that the greater the diversification, the more autonomous the divisions and the smaller the corporate central office. He also suggested that divisionalisation needs to fit the priority given to innovation vs. cost reduction. Matrix structures, of various types, fit intermediate levels of diversification. Overall, large size and diversification raise the required degree of bureaucratization, with task uncertainty causing some variations to it (Donaldson, 2001).

Luthans and Steward (1977) identified organisational contingencies as environmental, resources and management variables of the firm. Environmental variables according to Churchman (1968), affect the organisation, but are beyond the direct or positive control of the organisation's resource managers. They are usually considered as "givens" or independent variables that shape the organisation's structures and processes (Flynn et al., 2010). Porter (1980) and Duncan (1972) identified industrial structural characteristics as a main determinant of firms' profitability. According to Porter (1980), industrial characteristics such as industry concentration often results in barriers to entry for new firms and enabled established firms to share in industry profits (Bain, 1956). Besides it sets set bounds on the strategies and performance of firms that give rise to industry specific differences in profitability.

Resource variables are tangible and intangible factors over which management has more direct control and on which it operates to produce desired changes in the organisational system or its environmental supra-system (Churchman, 1968). A firm's unique resources are key factors in its profitability. According to the resource based value of the firm, the unique resources accumulated over time are difficult and costly to emulate, as a result they contribute to superior profitability for firms (Demsetz, 1973). High performing firms are able to maintain at least a portion of their competitive advantage over a period of time since the source of their advantage is ambiguous, exclusive, costly and/ or difficult to

emulate (Demsetz, 1973). Grant (1991) identified firm age, firm size and financial resources such as cash flow as some of the key profitability related resources of the firm.

Management variables refer to those concepts and techniques expressed in policies, practices and procedures used by the manager to operate on available resource variables in defining and accomplishing system objectives (Luthans and Steward, 1977). Many other theoretical and empirical studies on corporate board functioning and effectiveness have adopted the contingency theory. Empirical findings by Mangena et al. (2012) support the argument that corporate governance affects profitability. Zona et al. (2012) justified the relevance of the contingency hypothesis in corporate governance. Forbes and Milliken (1999) suggest that effective functioning of a board changes in line with the organisational context. Nicholson and Kiel (2003) in an attempt to investigate the impact of board capital (social, structural and human) on board roles, board effectiveness and firm performance, developed a contingency model for corporate boards. Wincent et al. (2010) on the other hand found a correlation between board features (such as diversity and interlocking directorates) and increased innovation.

4.3 THE CONCEPT OF FIT AND MISFIT IN CONTINGENCY MODELS

The concept of fit of an organisational structure is the heart of the contingency theory. It suggests that a company is considered fit when it is structured and positioned to do well in its activities. On the contrary, misfit is the deviation from the ideal fit. According to Miles and Snow (1984), fit is described as the state or process by which an organisation is able to align its strategy with its environment and also arrange internal resources to support such an alignment. They referred to such an alignment mechanism as a strategy and the internal arrangement as organisational structure and management process since it is very difficult to tightly integrate these major components in a changing environment for every organisation.

On the basis of this, they argued that organisations should always strive for rather than accomplishing perfect fit condition.

Many studies (e.g., Burton et al., 2000) have also delved into the concept of fit by using it to illuminate how organisational strategy affects organisational performance. In as early as the 1960s, Chandler (1962) proposed the strategy – structure fit proposition whilst later on, Lawrence and Lorsch (1967) developed the “environment – structure” fit proposition in their study of the plastics, food products and container industry firms. Woodward (1965) observed fit between the firm’s technology and the firm’s structure.

Van de Ven and Drazin (1985) in their study developed a major conceptual statement about fit which has guided current studies on the concept. They integrated a fit of multiple organisational structural variables to a contingency in their analysis using three concepts (selection, interaction, and systems). These three approaches were considered as mutually exclusive and provided complementary information about company behaviour. Selection approach suggests that for companies to be able to survive or become effective they must adapt to characterisation of their organisational context in terms of the way they operate and how they are structured. In other words the firm’s behaviour is determined by environmental, resource and management capability of the firms. Most early studies on contingency research adopted this approach to investigate the relationship between organisational design and organisational context rather than their impact on profitability. For instance, Dewar and Hage (1978) adopted the framework size, technology, complexity, and structural differentiation. They found that the most important determinant of structural differentiation in division of labour is the scope of the organisational tasks, technological dimension and not organisational size. Freeman (1973) on the other hand found strong evidence of the relationship between the various characteristics of technology and structure in the organisation when they adopted the selection approach. However, they failed to

investigate whether the different types of technology and organisational structural tasks were effective.

The second approach to contingency theory by Van de Ven and Drazin (1985) is based on the alternative notion that none of context, structure, or control alone should affect profitability; it is the fit among them that affects profitability. Fit is interpreted as an interaction effect of organisational structure and context on profitability (Khandwalla, 1977; Van de Ven and Ferry, 1980). This is obtained by estimating the total effect of each of the components after a given level of fit. Darnel (2009) suggests that the sum of the coefficients of the individual context and structural variables and their interaction term reflects the total effect of these variables on profitability. Burton et al. (2000) argued that in determining the total fit, both the coefficients of the interaction terms and the sum of the coefficients of the individual variables and their interaction terms should be significant.

Finally, the systems approach unlike the previous two approaches search for how the various patterns of contextual and structural variables influence profitability. According to Van de Ven and Drazin (1985), the understanding of context-structure-performance relationships can only advance by addressing simultaneously the many contingencies, structural alternatives, and performance criteria that must be considered holistically to understand organisational design. In order to achieve this; the systems approach advocates the need to use multivariate analysis to examine the patterns of consistency among the dimensions of organisational context, structure and performance. The consistency analysis in the systems approach uses the central concept of 'Fit' as being the "internal consistency of multiple contingencies and multiple structural characteristics, it affects performance characteristics" (Drazin and Van de Ven, 1985). Various studies have adopted the systems approach to estimate the relationship between organisational context, structure and performance. For instance, Pennings (1987) analysed simultaneously, a fit on a list of

multiple contingencies and multiple organisational structural variables. Keller (1994) on the other hand extended the study by adopting fit of an organisational structural variable to multiple contingencies.

Kraft et al. (1995) on the other hand investigated the dynamics of fit on different aspects of performance such as social cost vs. financial performance. Burton et al. (2000) conceptualised the concept of fit as a line of iso-performance. According to their model, they argued that a fit of organisational structure to a low level of the contingency (e.g., small size) produces the same performance as a fit of organisational structure to a high level of the contingency (e.g., large size). Evidence from their study found that firms with either or both situational and contingency misfits have lower performance increases than firms without misfits. According to them, a firm may not obtain increased performance from the elimination of misfits piecemeal, but will obtain significant nonlinear positive increases when misfits are fixed within a holistic or systems approach.

Donaldson (2001) also proposed a line of hetero-performance to conceptualised fit. Empirical evidence from Donaldson (2001) reveals that firms in fit position tend to have high performance, which leads them to increase their contingencies, such as size and diversification, which in the long run leads them to a misfit position and lower performance. According to him, the ensuing crisis of low performance causes these firms to adopt a new structure that fits the new levels of their contingencies, thereby restoring fit and performance. Donaldson (2001) went further to argue that the extent to which a firm in a misfit could trigger structural change of restoring fit and performance depends on other causes of performance that interact with it in misfit. Some of these other causes (include disinvestment and debt) could offset or reinforce the depressive impact of the misfit on performance. The set of causes of organisational performance and their effects on organisational growth and adaptation have been formalized into a new organisational

theory called organisational portfolio theory (see Donaldson, 1999). Therefore he concluded that firms are incentivised to change their level of contingencies so as to maximise profitability.

4.3.1 Multidimensional Contingency Model

The multidimensional contingency model is a systems model, which incorporates simultaneously, multidimensional concepts of fit. Many studies (e.g., Burton and Obel, 1998; Burton et al., 2000; Baligh et al., 1996) have argued that various multidimensional concepts, such as environment, leadership preference and strategy need to be incorporated simultaneously in order to enhance fit, which is measured as effectiveness, efficiencies and viability of the company. On the other hand, a company is in misfit when it performs less due to the misalignment.

A key example of a typical multidimensional model developed by Burton et al. (2000) is shown in Table 2 below. The model incorporates the traditional contingency variables namely: strategy, environment, size and technology to develop simultaneous fit among the various dimensions. Additionally, four categories of fit were identified in the model, namely: design parameter fit, situational fit, contingency fit and total fit. Design parameter fit occurs when there are internal consistencies among the various structural dimensions. According to Burton et al. (2000), situational contingency fit requires congruence among the design situation of factors. A typical example of a situational contingency fit of a firm will be a case where the firm's strategy, management processes, resources and environment are aligned. Therefore in an environment with high uncertainty, firms with a defender strategy could potentially face a misfit as a defender strategy works well in a more certain and stable environment (Miles and Snow, 1978). Also, Burton and Obel (1998) suggest that firms could face potential misfit if they practice a defender strategy in a

developmental climate since a developmental climate fits well with a more exploratory strategy of e.g., a prospector. Therefore according to the situational fit, each condition has what is required in a fit proposition to enhance high performance.

Contingency fit on the other hand, occurs when there is fit between a given set of contingent variables and multiple variables in an organisational design. The contingency fit relates the situational factors to the structural configuration and the properties. For instance, if the leadership style of a company is characterized by high micro involvement by top managers and a high decentralisation could lead to a potential misfit according to Burton et al. (2000). This is because, high micro involvement implies leaders wanting to be involved in management details which is not compatible with high decentralisation since it could generate conflict as lower managers see the top management as meddling and intrusion. Such a conflict could create non-productivity and yield lower performance. On the basis of this, Burton et al. (2000)'s proposition of fit is that with low micro involvement by top management should be matched with high decentralisation.

Another scenario of a potential misfit companies could face in terms of decentralisation is environment. For instance, a highly centralised company operating in a highly uncertain business environment is likely to face a potential misfit due to the level of information and decision overload on top management. Top management may face the problem of not getting the relevant information to make good decisions. Therefore Burton et al. (2000) suggests that in order for companies not to suffer from information and decision overload in a highly uncertain business environment, large companies need to have a highly decentralized management structure. Burton et al. (2000) also suggested that firms could face a misfit if its strategy is not well aligned with its structure. For instance, a company with a highly formalised structure is likely to face potential misfit if it has a prospective strategy. This is because a prospective strategy calls for flexibility, where a high

formalisation is likely to restrict and impede the requisite variation in action for a prospector, thus a misfit.

Finally total fit requires the realisation of all the three fit criteria without any misfit (Burton and Obel, 1998). Each may be important individually, but they may depend on each other, so the effect of obtaining a fit in one dimension may be hampered by the other according to Burton et.al (2000). Guided by these evidences and argument presented above by Van and Drazin (1985), this study adopts the systems approach to examine the patterns of consistency among a list of multiple contingencies, different components of working capital and how they affect profitability at different levels of interaction.

4.4 CONCLUSION

Given that the objective of this study is to investigate the relationship between working capital management, its contingencies and profitability, this chapter has explored the main theoretical framework to explain this association. It adopted the contingency theory as leading theoretical framework to enable prior identification of the main research questions and independent variables to direct the research. Based on Donaldson, (2001) framework of analysis on the theory, three main elements have been identified as the theory's core paradigm: (1) there is an association between contingency and the organisational structure; (2) contingency impacts the organisational structure; and (3) there is a fit of some level of the structural variable to each level of the contingency, where high fit leads to effectiveness and low fit leads to ineffectiveness. The framework started with structural contingency theory of organisation where it established a theoretical linkage between organisational structure, its contingencies and performance. This was followed by a discussion on the concept of fit and misfit in contingency models, where high fit leads to effectiveness and low fit leads to ineffectiveness.

CHAPTER FIVE

HYPOTHESES DEVELOPMENT

5.1 INTRODUCTION

This chapter translates both the theoretical and empirical studies discussed in chapter four and five on the relationship between working capital management, its contingencies and profitability into testable hypotheses. The chapter is composed of sixteen hypotheses. The first four determines the relationship between working capital management, its components and profitability, as determined by previous studies. Its objective is to isolate the impact of working capital management on profitability in order to determine if the impact may be caused by multiple contingent factors, as postulated in the contingency framework. In the second part of the section, four hypotheses are developed to determine whether the impact of working capital management and its components on profitability is constrained by the interaction of contingent factors as postulated in the contingency framework in chapter five. Finally, the last eight hypotheses are developed to estimate the impact of other variables found relevant by previous studies to influence the relationship between working capital management on profitability.

The rest of the chapter is structured as follows: Section 5.2 discusses the hypotheses for the impact of working capital management (CCC) and its components (AR, AP and INV) on profitability. Section 5.3 presents various hypotheses on whether the relationship between working capital management (CCC), its components (AR, AP and INV) on profitability is moderated by the interaction of ERM factors of the firm. Section 5.4 examines the impact of control variables on the relationship between working capital management on profitability. This section is in two parts, the first part examines the corporate governance

related variables whilst the second section incorporates company characteristics in estimating the relationship. A final conclusion of the chapter is presented in section 5.5 draws a conclusion for the chapter with a further summary presented in table 3.

5.2 WORKING CAPITAL MANAGEMENT AND PROFITABILITY

5.2.1 Working capital management

Previous studies (Deloof, 2003; Falope and Ajilore, 2009; Garcia-Teruel and Martinez-Solano, 2007) have adopted CCC as the traditional measure for working capital management. It measures the time lag between expenditure for the purchase of raw materials and the collection of sales of finished goods. Soenen (1993) asserts that the length of the CCC determines the firm's profitability. Firms with a longer cash conversion cycle often take a longer time to settle its suppliers than the collection of sales of finished goods from its customers and vice versa.

On the other hand, it has also be argued that firms with a shorter cash conversion cycle are able to maximise profitability due to their ability to internally generate funds which could reduce their reliance on external finance which often tends to be expensive (Autukaite and Molay, 2011; Banos-Caballero et al., 2013). In such an event, firms are able to finance their current assets with suppliers' credit, thereby avoiding the need for short-term loan, which can be very expensive and inaccessible to some firms' particularly smaller firms (Nobanee, 2009). A lower cash conversion cycle is also an indication of the firms' efficacy in the use of its working capital. It demonstrates how quickly they firm is able to convert its inventory into sales and how fast its able to recover receipts from credit sales whiles slowing down its cash disbursements (Nobanee, 2009). This helps to improve profitability for the firm. A number of empirical studies have supported this argument that firms with a shorter cash conversion cycle are able to maximise their profitability. In a

study by Mathuva (2010), cash conversion cycle was found to be negatively associated with profitability. This suggests that firms could maximise profitability by reducing their cash conversion cycle. García-Teruel and Martínez-Solano (2007), Falope and Ajilore (2009), Dong and Su (2010) have all reported that shorter cash conversion cycle improves profitability.

Similarly, firms' profitability could also be reduced with a shorter cash conversion cycle. Some customers could be deterred from patronising the product of their suppliers with an aggressive working capital management strategy. This is because most firms use trade credit to determine the 'reputation' and financial health of the company (Peel et al., 2000). Therefore by offering an extended cash conversion cycle, a company is able to convince customers that its products offer more value for money and that more benefits can be derived from patronising the products or services (Nadiri, 1969; Shipley and Davis, 1991; Deloof and Jegers, 1996; Blazenko and Vandezande, 2003). As a result, selling to customers on immediate cash payment basis or collecting amount owed as quickly as possible may deter customers from patronising the company's products. It may also involve negative effects such as default risk (Shi and Zhang, 2010), late payment (Pike and Cheng, 2001) and transaction cost of converting receivables into cash (Kim and Atkins, 1978), which may damage a firm's profitability (Martinez-Sola et al., 2013; Sartoris and Hill, 1983). A lengthy cash conversion cycle may improve company profitability by increasing sales (Deloof, 2003).

In the same vein, having more inventories in stock means those customers will always have what they want; this may lead to higher sales and improve profitability. Also, a lengthy cash conversion cycle means that the company will pay suppliers upfront. This has the advantage of improving the profitability of the company because of the cash discount to be enjoyed. Also, delaying payments to suppliers may impair profitability of companies

because of the lost saving on cash discount available. However, paying suppliers immediately upon purchases and extending more credit period to customers may require the company to seek extra funding. But these extra funds will represent a cost to the company because of the interest payment involved.

Empirical work of Martinez-Sola et al. (2013), support the argument that when firms relax their credit period, they are able to reduce the storage costs of the excess inventories accumulated which could also improve their profitability. A number of empirical studies (see, Nobanee et al., 2010; Uyar, 2009; Wang, 2002; Zariyawati et al., 2009; Lazaridis and Tryfonidis, 2006; Garcia-Teruel and Martinez-Solano, 2007) have also supported this argument. On the contrary, Padachi (2006), Dong and Su (2010), Sen and Oruc (2009), Raheman et al. (2010) found a positive association between cash conversion cycle and profitability. On the basis of the enormous advantages that a shorter cash conversion cycle brings to the firm based on the above theoretical arguments, the following hypothesis is postulated:

H₁ THERE IS A SIGNIFICANT NEGATIVE RELATIONSHIP BETWEEN CASH CONVERSION CYCLE AND PROFITABILITY.

5.2.2 Accounts Receivables

Accounts receivables can be seen as short-term loans to customers given by the supplying firm. It represents investment in working capital of firms (Martinez-Sola et al., 2013) and acts as a source of finance to the buyer (Lee and Stowe, 1993). By allowing customers time to pay, firms assume the position of financial institutions (Jain, 2001) because the time gap between purchase of goods and/or services and payment offer a source of finance to customers (Berger and Udell, 1998; Danielson and Scott, 2004).

The firms profitability is significantly affected by its accounts receivable policy (Banos – Caballero et al., 2013; Garcia-Teruel and Martinez-Solano, 2010a; Peel et al., 2000). It is found that firms with very long accounts receivables days usually take a considerable amount of time to receive payment from its customers than their peers with a shorter days accounts receivables. According to the product differentiation theory of trade credit, accounts receivable can be used like any other sales promotional tool to increase sales and profitability (Nadiri, 1969; Blazenko and Vandezande, 2003). According to this theory, accounts receivable is used to differentiate a company's product from that of competitors (Nadiri, 1969; Blazenko and Vandezande, 2003). By offering trade credit, a company is able to convince customers that its products offer more value for money and that more benefits can be derived from patronising the products or services (Nadiri, 1969; Shipley and Davis, 1991; Deloof and Jegers, 1996; Blazenko and Vandezande, 2003). Therefore, managers can maximise firm profitability through product price and trade credit. Garcia-Teruel and Martinez-Solano (2010a) found that companies are able to stimulate sales with an increase level of accounts receivable. By extending the number of day's accounts receivables, companies are able to entice their customers to purchase more of the product/service which in the long run improve its profitability. It also serve as quality guarantee to customers (Smith, 1987; Pike and Cheng, 2001). By delaying payment, customers are able to use the period between purchase and payment to check for the quality of the goods and/or services.

Accounts receivables may increase profitability because of the implicit interest rates involved (Emery, 1984). The granting of trade credit may also improve a firm's profitability through the reduction in operating and transaction costs (Ferris, 1981). By relaxing the credit period according to Garcia-Teruel and Martinez-Solano (2010), companies are able to reduce the storage costs of the excess inventories accumulated. This

argument has been justified by Martinez-Sola et al. (2013) who found that managers can improve profitability by increasing investment in accounts receivables, which is consistent with Hill et al. (2012) and the theoretical models presented by Kim and Atkins (1978); Sartoris and Hill (1981) and Sartoris et al. (1983). Also, previous researches (such as Nobanee, 2009; Ramachandran and Janakiraman, 2009) found positive relationship between accounts receivable period and profitability.

On the contrary, a high investment in accounts involves negative effects, such as default risk (Shi and Zhang, 2010); late payment (Pike and Cheng, 2001) and transaction cost of converting receivables into cash (Kim and Atkins, 1978), which may damage a firm's profitability (Martinez-Sola et al., 2013; Sartoris and Hill, 1983). The problem of adverse selection could cause a company to offer credit to a customer with a poor credit history, which may end up as bad debt and therefore dwindle profitability. According to Cheng and Pike (2003), by maintaining a high a level of trade credit, companies tend to finance the buyers' inventory and also bearing the credit risk. This may affect its profitability maximisation.

Most empirical research on the effect of accounts receivable management on firm performance has supported these arguments. Deloof (2003) found a significantly negative relation between accounts receivable and profitability, arguing that customers want more time to access the quality of products they buy from firms with declining profitability. Other researchers (such as Raheman and Nasr, 2007; Nobanee and AlHajjar, 2009a; Garcia-Teruel and Martinez-Solano, 2007; Sen and Oruc, 2009; Dong and Su, 2010) all found a significantly negative relationship between WCM and profitability, therefore concluded that the collection policy of a firm has a significant effect on profitability, implying that the increase or decrease in accounts receivable will significantly affect profitability of firms. Based on the above literature, the following hypothesis is formulated:

H₂: THERE IS A SIGNIFICANT NEGATIVE RELATIONSHIP BETWEEN ACCOUNTS RECEIVABLE PERIOD AND PROFITABILITY.

5.2.3 Accounts Payables

Accounts payable represents an important source of short-term funds for most firms (Berger and Udell, 1998; Deloof and Jegers, 1999; Wilner, 2000; Garcia-Teruel and Martinez-Solano, 2010a). It constitutes a significant portion of firms' current assets used as a source of short-term financing for companies (Garcia-Teruel and Martinez-Solano, 2010a). Current studies on the relationship between accounts payables and profitability have found a significant relationship. A lot of reasons can be used to support these findings. It is argued that firms with a longer payables day's period wait longer before settling their supplies while those firms with a shorter payables days period settle their bills within a shorter period of time. Ng et al. (1999) argued that firms that wait longer before settling their supplies often tend to lose discount for early payment. This sometimes affects their profitability as the amount of cash discount can sometimes be substantial leading to some firms facing a high opportunity cost due to the loss of discount and the high inherent cost involved in credit period. On the basis of this, the decision to accept or request for credit period results in an inherent cost to a company, which diminishes profitability. Previous studies of Padachi (2006); Deloof (2003); Garcia-Teruel and Martinez-Solano (2010b); Lazaridis and Tryfonidis (2006) and Nobanee (2009), all found a negative association between accounts payable period and profitability.

On the other hand, it was also argued that firms could also increase their profitability by having a longer payable period. It is found that a longer credit period results in a reduction in transaction cost (Ferris 1981; Emery, 1987; Petersen and Rajan, 1997), thereby increasing profitability for firms. The availability of the cash flow generated through delay

payment may also lead to an increase in investment of accounts receivable and inventory day held which may lead to higher profitability as firms are also able to reduce their transactional cost of paying bills according to Ferris (1981). Ferris (1981) suggests that larger inventories can reduce supply and collection cost on the firm as both suppliers and customers in the long run work towards better time management for delivery / payment to optimise both inventory and cash levels (Paul and Boden, 2008). It also allows companies to accumulate amounts owing and pay them at a period interval according to the credit period agreement, such as monthly or quarterly. This helps companies to overcome financial constraint (Schwartz, 1974; Pike and Cheng, 2001).

Mathuva (2010) found a positive and highly significant association between accounts payable period and profitability. He suggested that firms could enhance their profitability when they take advantage and use suppliers' credit for working capital needs. Other studies (e.g., Falope and Ajilore, 2009; Vishnani and Shah, 2007; Raheman et al., 2010; Sen and Oruc, 2009; Dong and Su, 2010) found similar results. Due to the inherent benefits associated with longer accounts payable period among firms, the following hypothesis is formulated:

H₃: THERE IS A SIGNIFICANT POSITIVE RELATIONSHIP BETWEEN ACCOUNTS PAYABLE PERIOD AND PROFITABILITY.

5.2.3 Inventory Holding Period

Inventory as a component of Working Capital Management (WCM) is very important to the profitability of firms (Koumanakos, 2008). Existing studies (Gill et al., 2010; Ching et al., 2011) have also demonstrated that a firm's profitability is affected by the amount of inventory held. Firms with lower inventory held demonstrates how quickly they are able to dispose of their inventory, while a higher inventory demonstrates how slowly the

inventory held is dispose of. Deloof (2003) argues that inventory management involves a trade-off between sales and costs. High inventory helps firms to make high sales (Deloof, 2003; Gill et al., 2010). It also helps to prevent trading interruptions caused by stock-out in the production process resulting in loss of client business (Mathuva, 2010; Deloof, 2003; Gill et al., 2010; Falope and Ajilore, 2009). Lack of inventory can also result in poor customer service as customers may not be adequately served, forcing both current and prospective customers to take their business elsewhere (Koumanakos, 2008). The availability of inventory will also improve company profitability because it will prevent the company rushing into making emergency buying. Emergency buying normally costs higher than normal purchase because it is usually unarranged. At the same time it may also cause defections in the production line, which may negatively affect profitability because the company may be unable to get the required standard of quality due to the urgency of the purchase.

According to Gill et al. (2010), a high level of inventory averts trading interruptions which could contribute to profit maximisation for firms. A stock out situation can have a major downward impact on profitability because of its associated cost. For example, having no stock will damage the reputation of the company; this may cause both current and future customers to take their businesses elsewhere. It will also increase the cost of production without a corresponding increase in revenue because of idle time situation. This will eventually increase the cost of the goods of the company and decrease the profit margin, thereby reducing profitability. However, too much of inventory could have detrimental effect on the profitability of firms. This is because large inventories will mean that money is locked up in working capital, which could have been used to generate additional income to the firm. According to Falope and Ajilore (2009), firms that invest heavily in inventory can suffer reduced profitability. Inventory consumes physical space which increases the

warehouse cost of rent (Koumanakos, 2008). Also too much of inventory may increase the possibility of damage, spoilage or loss of stock of inventory. Excess inventory may also increase the cost of insurance premium and also increase the cost of security expenses. All these inventories related costs will create a financial burden to the firm, which may adversely affect the level of profitability. According to Koumanakos (2008), excessive inventory frequently compensates for sloppy and inefficient management, poor forecasting, haphazard scheduling and inadequate attention to process and procedures. Having a high level of inventory may also rescue a company from price fluctuations (Blinder and Maccini, 1991). Previous researches such as (Mathuva, 2010; Padachi, 2006; Nobanee, 2009; Christopher and Kamalavalli, 2009; Nobanee and Alitajjar, 2009b) found a positive relationship between inventory holding period and profitability.

On the contrary, it is argued that a firm's profitability could be reduced when it holds high amount of inventory. This is because maintaining a high level of inventory represents amount of the companies' money locked up on the inventory. This may result in a sub-optimisation of financial resources as the opportunity cost of investing the funds on profitable projects to enhance the firms' profitability is forgone. Besides, the lock up of capital in inventory may push the firm to seek alternative source of short-term finance which may increase its cost of financing thereby reducing its profitability. Also, the associated holding cost (e.g. security cost, rent, heating, obsolesce and theft) of the inventory could reduce the firms profitability. Drury (2000), contend that through aggressive reduction in inventory levels, firms are able to minimise overhead costs and cost of capital employed. This according to existing studies (Nazir and Afza, 2009; Weinraub and Visscher, 1998) enhances firms' profitability. Banos-Cabellero et al. (2013), suggests that firms with low level of inventory could enhance their profitability through the

opportunity cost of investing excess funds not tied up in inventory into profitable investments.

There have been mixed empirical results on the relationship between firm's profitability and inventory control. For instance, a significantly positive relationship was found by Eroglu and Hofer (2011b); Gill et al. 2010 and Mathuva (2010). Other studies (Garcia-Teruel and Martinez-Solano, 2007; Deloof, 2003 and Falope and Ajilore, 2009) found a significantly negative association. However, since high level of inventory is the associated holding cost (e.g. security cost, rent, heating, obsolescence, theft) to firms, the following hypothesis is formulated:

H₄: THERE IS A SIGNIFICANT NEGATIVE RELATIONSHIP BETWEEN INVENTORY HOLDING PERIOD AND PROFITABILITY.

5.3 WORKING CAPITAL MANAGEMENT, ORGANISATIONAL CONTINGENCIES (ENVIRONMENTAL, RESOURCE AND MANAGEMENT FACTORS)

The importance of environment to firm profitability is evident by the differences in product and market structure of firms (Jose et al., 1996). The logic behind this is that, firms operating at relatively higher productivity levels have competitive advantages over less productive competitors which are reflected in their profitability. Besides, since different industries have different risk profile and competition intensity, companies belonging to different industries will have varied levels of profitability. For instance, it has been found that companies belonging to the same industry exhibit similar profitability profile but profitability differences exist between companies from different industries. According to Porter (1980), industrial characteristics such as industry concentration often results in barriers to entry for new firms and enabled established firms to share in industry profits

(Bain, 1956). Besides it sets set bounds on the strategies and profitability of firms that give rise to industry specific differences in profitability.

Many theoretical perspectives have long recognised the importance of industry membership for company profitability (Rumelt, 1991; McGahan and Porter, 1997; Short et al., 2007). For example, it has been found that companies belonging to the same industry exhibit similar profitability profile, but profitability differences exist between companies of different industries. According to Porter (1980), the differences in profitability level of companies within an industry also depends on the bargaining power between the supplier and customer. In an industry with few suppliers but many customers, suppliers may enjoy enhanced profitability by dictating to customers; such as determining the price of the products and even the terms of credit to be offered. On the other hand, an industry with many suppliers but few customers may see profitability plummeting because customers will be dictating the terms of engagement. The current and future profitability level of companies within an industry may be impaired if there are not enough entry barriers available. Also, the availability of substitute products may negatively affect profitability because it will reduce the market share of companies within an industry. The level of competition within an industry may also affect the profitability of companies. Intense competition may cause profitability to drop because of the level of infighting. However, companies in a low competitive industry may boost profitability because they can take initiatives without retaliation from other companies. It is suggested that the industry belonging explains between 17 per cent and 20 per cent of profitability variance (Schmalensee, 1985; Wernerfelt and Montgomery, 1988; Rumelt, 1991).

Against this backdrop, the environment has an influence on the relationship between WCM and profitability of companies. Several earlier studies have focused their analyses on differences in working capital management across industries (Hawawini et al., 1986;

Filbeck and Krueger, 2005). Smith (1987) and Ng et al. (1999) suggested a wide variation in credit terms across industries, but little variation within industries. Later, Niskanen and Niskanen (2006) also demonstrated differences in the levels of accounts receivable and accounts payable between industries. Nonetheless, economic conditions and industry sector/market in which firms operate also influence working capital management decisions among firms. For instance, during periods of economic down turn, businesses bear the brunt of the credit squeeze, as a result, companies, tend to offer even more generous credit terms to win business. Fast growing firms or those operating in competitive markets are more likely to offer additional credit to extend their market share; in tend, they might be expected to demand more credit from their suppliers to create equilibrium in their cash conversion cycle (Paul and Boden, 2011). By investing in working capital, firms are able to make higher profitability through enhanced operational efficiencies.

Companies are able to reduce the cost of transactions between them, which may lead to increase in profitability (Petersen and Rajan, 1997). It also helps to differentiate their product from that of competitors (Deloof and Jegers, 1996) and also signals confidence in product quality and of long-term market presence therefore acting as an implicit warranty to customers (Paul and Boden, 2011; Petersen and Rajan, 1997). Similarly, a stock out situation will have significant effect on a company's profitability because a company without stock may lose its goodwill (Bhattacharya, 2008). It also drives both current and potential customers away to competitors. On the contrary, an increase in inventory holding period could also lead to reduction in profitability through inventory holding costs such as warehouse storage costs, insurance costs, cost of spoilage, theft of inventory etc. A reduction in accounts receivable period may also increase profitability because it will increase the cash flow available to a company, which can be used to run the day-to-day operations of a company. Based on this empirical insight, firms will need to have an

optimal working capital level that balances cost and benefit in order to maximize their value.

Notwithstanding this, firm's unique resources also play a key role in its profitability. According to the resource based value of the firm, firm's unique resources accumulated over time are difficult and costly to emulate, as a result they contribute to superior profitability for firms (Demsetz, 1973). Grant (1991) identified firm age, firm size and financial resources such as cash flow as some of the key performance related resources of the firm. The age of a company denotes its number of years in existence. It is found by (Bertrand and Mullainathan, 2003; Loderer and Waelchli, 2010) to be one of the main determinant of company profitability. Its association with profitability can be attributed to a number of reasons. First, success in new product development will lead to younger companies enjoying increased profitability. Normally, new entrants enter the market with new inventions that catch the attention of the market and thereby increase profitability. On the contrary, older companies may have had all their inventions exhausted and therefore unable to increase profitability. Second, the profitability of older companies may decline due to competitive pressures from new entrants. Increase in the number of new entrants will shrink the market share of existing companies as they compete for their own market share, which will cause a reduction in existing companies' profitability. This may result in higher unit cost of products because of the reduction in the number of units produced.

Another cause for the decline in older companies' profitability is obsolete assets. Older companies may be forced to continue operating with obsolete equipment due to high investment made in those machines. Due to the rapid technological changes in the business environment equipment easily become outmoded that reduces their productive power, thereby causing a reduction in the overall company profitability. Barron et al. (1994) argue that older companies are prone to suffer from a 'liability of obsolescence' due to their

inability to fit in well to the changing environment. Research has also shown that investment in R&D declines as companies grow older (Loderer and Waelchli, 2010). R&D is the driving force in companies as it helps companies to explore new avenues, which helps increase profitability. Therefore, a reduction in R&D will result in a reduction in older companies' profitability. The reason for the reduction in older companies' R&D as argued by Bertrand and Mullainathan (2003) may be that they are now pursuing quieter life because the desire to succeed may be minimal. Both the lifecycle and competitive market view also hold that the rate of profitability declines over the life of a firm because of imitators. A research by Majumdar (1997) found that even though older firms are more productive, they are less profitable. Boeker (1997) and Szulanski (1996) contend that older companies suffer from non-learning processes, blindness and conservatism, which cause poor profitability.

On the other hand, other researchers have also argued for a reduction in the profitability of younger companies. Firstly, younger companies are mostly inexperienced in their newfound market, which limits their ability to generate higher profitability. A company that has just entered a market may have to undergo the learning curve in order to grasp the practices and procedures within the market. The period of learning curve incurs mistakes, which results in the inefficient use of materials and other resources, thereby reducing the overall profitability of companies. For example, Sorensen and Stuart (2000) argue that young companies may lack detailed information about their business, other companies and the environments until they become active in the market. On the contrary, older companies are more experienced, have enjoyed the benefits of learning and not prone to the effects of newness (Stinchcombe 1965), which results in superior profitability. Older companies may also enjoy superior profitability because of their established contacts with customers, and easier access to resources (Coad et al., 2010). A younger company may also incur higher

cost structure in the form of sunk cost, which may affect its profitability. A younger company may have to invest heavily in fixed assets and personnel in order to be able to start operating. A research by Majumdar (1997) and Mathuva (2010) also found a positive relationship between company age and profitability. A younger company may have to invest heavily in fixed assets and personnel in order to be able to start operating.

Athanasoglou et al. (2005) suggested that older firms become more profitable than new and growing firms because of their ability to establish reputation in the market and also their ability to build long term relationship with their customers. In working capital management, this relationship is very beneficial to both parties particularly in optimal pricing, lending and renegotiations strategies (Peterson and Rajan, 1994, 1995, and 1997; Ng et al., 1999). The long term relationship build overtime by older firms with their customers help them to gather valuable quickly information about customers' financial health through their payment patterns and their ability to take advantage of any discounts offered for early payment (Paul and Boden, 2008). This helps prevent the risk of default which eventually erodes their profit margins. Older companies may also enjoy superior profitability because older firms can get external financing more easily and under better conditions (Berger and Udell, 1998), and also able to better work towards a better time management for delivery / payment to optimise both inventory and cash levels (Paul and Boden, 2008).

On the contrary, Szulanski (1996) argues that older companies suffer from non-learning processes, blindness and conservatism, which cause poor profitability. Barron et al. (1994) also argue that mature firms often have high chances of suffering from obsolescence and senescence due their inability to fit well in the changing business environment due their inflexible rule, routines and organisational structure. According to Loderer and Waelchli (2010), as companies expand their investment in R&D declines. This often translates in

low in profitability for older firms since they are not able to explore new avenues in the market through R&D (Bertrand and Mullainathan, 2003). Also, companies with available cash flow may take advantage of the cash to make bulk purchases which may reduce the procurement cost of production. The bulk purchase cost savings will also result in a decrease in the cost of sales of the product, which will reduce the overall price of the product leading to more profitability (Ng et al., 1999; Wilner, 2000).

The availability of cash flow may also lead to an increase in investment of accounts receivable. A company with available cash flow may be in a better position to offer generous credit offers to customers. An increase in the investment of account receivable may lead to higher profitability. This is because, companies offer trade credit to allow customers the necessary time to be able to verify the extent of the quality of the product (Smith, 1987). Many other theoretical and empirical studies support the argument that efficient management of the firm cash flow significantly affects profitability. According to the Agency theory, good governance enhances firms' value (Jensen and Meckling, 1976). Ntim (2013) suggests that firms with better corporate governance standards tend to be associated with higher market valuation since such firms are able to improve managerial monitoring and decision making as well as a reduction in expropriation and wastage from managers (Renders et al., 2010). It is argued by Ntim et al. (2012a) that firms with concentrated ownership tend to face a less active market for managerial and corporate control which significantly affects their profitability. According to Maherbe and Segal (2003), firms are able to reduce political cost as well as have access to greater resources which could be translated into improved operating performance and market valuation when they comply with the stakeholder corporate governance provisions.

Zona et al. (2012) justified the relevance of the contingency hypothesis in corporate governance. One of the key corporate governance management variables adopted by most

studies (Wincent et al., 2010; Nicholson and Kiel, 2003) in the contingency framework is corporate board of directors. This is attributed to the fact that effective functioning of a board changes in line with the organisational context as (Forbes and Milliken, 1999). Nicholson and Kiel (2003) in an attempt of investigate the impact of board capital (social, structural and human) on board roles, board effectiveness and firm performance developed a contingency model for corporate boards. Zona et al. (2012) asserts that the effects of board characteristics on firm innovation need to be evaluated with reference to contingency variables. Therefore according to Guest (2009), it is important to investigate the central role played by a company's board of directors when investigating the impact of corporate governance on firms' value since they have the strategic functions of monitoring and advising (Raheja, 2005; Adams and Ferriera, 2007) the board on key strategic issues. According to Ntim (2012), the board has the responsibility to monitor, ensure compliance, discipline and also that the interests of shareholders is pursue by managers. It also according to him has the responsibility to provide expert advice to the CEO and access to critical information and resources (Jensen, 1993; Jensen and Meckling, 1976) to ensure performance. This is often performed by both outsiders and insiders who tend to bring valuable expertise and important connections to the board especially outside directors (Fama and Jensen, 1983). Raheja (2005) suggests that compared to insiders, outsiders tend to be more independent, more efficient in monitoring firms activities but less informed about the firm-specific information for the board.

On the contrary, according to Raheja (2005), insiders are an important source of firm-specific information for the board, but may have distorted objectives due to private benefits and lack of independence from the CEO. However is argued by (Lipton and Lorsch, 1992; Jensen, 1993) that relationship between board size and firms value to be a u-shaped. Thus initially, larger boards are able to facilitate the key function of the board but with time,

problems of communication and coordination declines board effectiveness and performance.

A number of empirical evidence (Gompers et al., 2003; Cremers and Nair, 2005; Ntim, 2013; Mangena et al., 2012; Bebchuk et al., 2009) on the relationship between corporate governance and firms' value has been carried out. Evidence from these studies supports the argument that corporate governance affects firms' value. For instance, Ntim (2013) in his study on relationship between corporate governance and firms' value on a sample of South African firms found a significantly positive association between a composite CG index and firm value suggesting that good corporate governance significantly improves firms' value. Similar results have been found by Bebchuk et al. (2009); Cremers and Nair (2005); Gompers et al. (2003) on a sample of some selected American firms. Renders et al. (2010) after controlling for both endogeneity and sample selection bias also found a positive association between CG and firm value in a sample of European firms. Dalton et al. (2005) found a positive relationship between board size and firms' value. On the basis of such evidence they argued that larger boards are able to facilitate this key function of having greater collective information to ensure higher profitability. Ntim et al. (2012) found similar evidence and went further to suggests that compared to smaller boards, larger boards have the advantage of improved monitoring and greater opportunities to secure critical business resources to enhance firms' value. This is contrary to the evidence of Guest (2009) who argued that there is greater free-riding resulting in low profitability among larger firms. On the basis of this, the following hypothesis is formulated:

H₅: FIRMS' ENVIRONMENTAL, RESOURCES AND MANAGEMENT FACTORS SIGNIFICANTLY MODERATE THE RELATIONSHIP BETWEEN ACCOUNTS RECEIVABLES AND PROFITABILITY.

H₆: FIRMS' ENVIRONMENTAL, RESOURCES AND MANAGEMENT FACTORS SIGNIFICANTLY MODERATE THE RELATIONSHIP BETWEEN ACCOUNTS PAYABLES AND PROFITABILITY.

H₇: FIRMS' ENVIRONMENTAL, RESOURCES AND MANAGEMENT FACTORS SIGNIFICANTLY MODERATE THE RELATIONSHIP BETWEEN INVENTORY HOLDING PERIOD AND PROFITABILITY.

H₈: FIRMS' ENVIRONMENTAL, RESOURCES AND MANAGEMENT FACTORS SIGNIFICANTLY MODERATE THE RELATIONSHIP BETWEEN CASH CONVERSION CYCLE AND PROFITABILITY.

5.4 CONTROL VARIABLES AND PROFITABILITY

5.4.1 Corporate Governance and Profitability

5.4.1.1 Chief Executive Officer (CEO) Tenure

CEO tenure is an important component to company profitability and executive leadership. It is argued that a CEO that has spent a long time at his or her post will resort to empire building. A CEO with such a lengthy time in a company will become more comfortable and will use his or her power and knowledge gained to seek his or her own interest at the expense of profitability. It may also lead to CEO entrenchment. This entrenchment results from the fact that a long tenured CEO may dominate the board, which will lead him or her to pursue costly projects that can jeopardise a company's profitability. Empirical evidence of Farooque et al. (2007) suggests that the longer a CEO serves, the more the firm-employee dynamic improves. But an extended term strengthens customer ties only for a time, after which the relationship weakens and the company's profitability diminishes, no

matter how united and committed the workforce is. Luo et al. (2013) associated this to the learning life style of CEOs. At early stages, new CEOs seek information from diverse sources (internal and external) in order to accumulated knowledge so as to enhance their profitability. However, with time they tend to relay more on internal sources for information as growing less attuned to market conditions. This in a long run diminishes the profitability of the company.

The number of years that a CEO has been in the realm of affairs will significantly affect company profitability. On the negative side, it is argued that a CEO who has spent a long time at his or her post will resort to empire building. A CEO with such a lengthy time in a company will become more comfortable and will use his or her power and knowledge gained to seek his or her own interest at the expense of profitability. It may also lead to CEO entrenchment. This entrenchment results from the fact that a long tenured CEO may dominate the board, which will lead him or her to pursue costly projects that can jeopardise a company's profitability. He or she may also use such power and domination to ask for higher compensation package at the expense of profitability (Hill and Phan, 1991; Allgood and Farrell, 2003). The domination of CEO over the board due to longer tenure is proved by a model developed by Hermalin and Weisback (1998). This model predicted that board independence actually declines over the course of a CEO's tenure. A long tenured CEO may have the opportunity to influence the selection of directors (Zajac and Westphal, 1996). This opportunity will offer him or her advantage of choosing directors who are sympathetic, which will afford him or her ability to exert own influence and discretion that may minimise profitability. Another negative effect of longer CEO tenure stems from the fact that it results in the board becoming more relaxed and less vigilant in monitoring the CEO (Lorsch and MacIver, 1989; Coles et al., 2001), which may decrease profitability. Once the board has gained the trust of the CEO they reduce their monitoring effectiveness,

but this may give a course for CEOs to start pursuing their own interest that impair profitability.

Farooque et al. (2007) did a study on the link between CEO tenure and profitability and found a negative association. On the other hand there are arguments that suggest that a longer tenured CEO leads to higher company profitability. It is argued that since new CEOs may require some time to adopt into their new role through learning, their profitability may therefore be improved with time that will enhance profitability. Shen (2003) maintain that CEOs spent a lot of time to achieve the success of their work and that the ability of a CEO will increase with time. It means that their increased ability will have a positive influence on profitability. As suggest by Gabarro (1987), new CEOs normally require one or two years to acquire the needed task knowledge to be able to take major decisions. Also, as a CEO stays in an office for long, it helps him or her to acquire company specific knowledge that helps to maximise profitability. Shen (2003) argues that CEOs continue to accumulate task knowledge and also sharpen their leadership skills with time. Longer tenured CEOs are motivated to improve profitability because they have the benefit of seeing the results of their decision taken (Kyereboah-Coleman, 2007b).

Another profitability enhancement of longer CEO tenure is that it leads to lower monitoring cost, which may show in improved profitability. New CEOs because of their unproven abilities are watched closely. This results in substantial monitoring cost at the expense of profitability. However, on the contrary it is shown that because new CEOs are keenly watched, it actually propels them to achieve higher performance. This higher performance stems from the fear of been dismissed, because research has shown that CEO dismissal is acute during the first five years in office (Shen and Cannella, 2002). A positive association between CEO tenure and profitability was found by Agrawal and Knoeber (1996). Based on the above literature, the following hypotheses are formulated:

H₉ THERE IS A SIGNIFICANT POSITIVE RELATIONSHIP BETWEEN CHIEF EXECUTIVE OFFICER (CEO) TENURE AND PROFITABILITY.

5.4.1.2 Board size

Current studies (Jensen, 1993; Yermack, 1996; Mak and Yuanto, 2003; Anderson et al., 2004) have found a relationship between the size of a company's board and its profitability. These studies can be categorised into two schools of thought. In the first it has been found that smaller board sizes do improve profitability of many companies. According to previous studies of (e.g., Lipton and Lorsch, 1992; Yermack, 1996; Eisenberg et al., 1998), smaller company board size enhances easy coordination and interaction between the board members and the CEO. This helps to improve board efficiency and profitability. Besides, it helps improve cohesiveness within the directors on the board which allows quick decision making among members as compared to those companies with larger board size. Less time spent at board meetings could reduce the time cost per each director leading to reducing the overall cost of the company and improved profitability. More so, smaller boards have the advantage of an accelerated cross communication between board members, the CEO and other members of the company. This however, could improve the profitability of the company. Furthermore, according to research by Kyereboah-Coleman (2007a) and Shakir (2008), smaller boards often prevent the possibility of free riding behaviour by some directors. According to Bathula (2008), most companies with smaller boards are able to improve their performance because they are able to avoid factions and conflict often prevalent on larger boards. Such conflicts usually results into unnecessary waste of resources and time leading a fall in profit for affected firms. Previous studies of Yermack (1996); Liang and Li (1999); Vafeas (1999) and Dahya et al. (2008) have all found a negatively significant relationship between company board size and profitability.

On the contrary, evidence by Pfeffer (1972), Klein (1998), Dehaene et al. (2001) and Coles et al. (2008) suggest a positive relationship between company's profitability and its board size. Against this back drop it is argued that the larger board size, better the profitability of the company. The theoretical argument to support this argument suggests that companies with large board size are able to enjoy a lot of valuable advice from a large number of board members (Dalton and Dalton, 2005). According to Van den Berghe and Levrau (2004), expanding the number of directors provides an increased pool of expertise. Many directors mean that there will be diversity of specialisation, which can enhance the decision-making processes within the company. The diversity of specialisation could help companies to secure critical resources and also reduce environmental uncertainties (Goodstein et al., 1994). Furthermore, it makes it easier to create committees within the company for the effective execution of duties and responsibilities (Bathula, 2008). These communities are able to sub-divide the duties and responsibilities on the lines of specialisation and expertise so as to ensure effectiveness and efficiency, which may maximise profitability. More so, there is also greater monitoring ability on management (Klein, 1998; Adam and Mehran, 2003; Coles et al., 2008) among companies with larger board size. Since a bigger board size creates the room for a large number of directors to oversee different activities of management simultaneously.

Also, with a large board size, the possibility of CEO dominance and influence is greatly minimal. It makes it difficult for the CEO to influence the decision of the board due to its size. This helps to minimise CEO domination and pursuant of personal interest thereby leading to profitability. According to Shakir (2008), larger board size improves performance due to its ability to bring on board a diversity of individuals in terms of gender and nationality. Different nationalities will bring on board diversities of cultures and morals and different standpoints of looking at things, which may help improve

performance for the company. Previous researchers (Uadiale, 2010; Mangena et al., 2012; Kajola et al., 2008) have found a positive relationship between profitability and company board size. On the basis of this evidence, the following hypothesis is formulated:

H₁₀ THERE IS A SIGNIFICANTLY POSITIVE RELATIONSHIP BETWEEN COMPANY BOARD SIZE AND PROFITABILITY.

5.4.2 Company Characteristics and Profitability

5.4.2.1 Company Size

The size of a company is maintained by Serrasqueiro and Nunes (2008) to be one of the most fundamental determinants of a company's profitability. Haniffa and Hudaib (2006) suggest that firm size may be related to firm profitability. Current studies (Baumol, 1959; Punnose, 2008) have also postulated a significant relationship between the size of a company and its profitability.

According to previous by Singh and Whittington (1975), Serrasqueiro and Nunes (2008), larger firms are profitable than smaller firms because larger firms usually enjoy economics of scale and a higher negotiation power over their clients and suppliers (Serrasqueiro and Nunes, 2008; Singh and Whittington, 1975). Larger firms tend to enjoy economics of scale in the form of operating cost and the cost of innovation (Hardwick, 1997). Thus as the number of units produced increases, the price per unit drops. These benefits tend to reduce the unit cost of production leading to increased profitability. Shepherd (1986) also suggested that company size determines its bargaining power. Thus companies with superior bargaining power, tend to be more profitable as such companies are able to influence their trading relationship in terms of the amount of credit granted, the terms of payment, quality of the products and even the means of delivery. It is however suggested that larger firms

tend to have superior bargaining power over their suppliers and often tend to dictate the amount of credit granted, terms of payment and the quality of the suppliers' product. This however, helps these firms to be more profitable. In addition, small firms may have less power than large firms; hence they may find it difficult to compete with the large firms particularly in highly competitive markets (Majumdar, 1997) since larger firms have more advanced and sophisticated marketing skills, research capabilities and product development experience, which together form the foundation higher profitability (Dewar and Dutton, 1986). Cabral and Mata (2003) also suggested that larger firms are more profitable than smaller firms due to their easy access to finance from financial institutions. This is because larger firms often tend to be less likely to default on the credit agreement and are also less likely to fail. Besides larger firms are able to provide the required assets to use as collateral in order to secure the necessary credit to make very pertinent investments, which maximises profitability.

On the other hand, according to Yang and Chen (2009), larger firms have preferential treatment over smaller firms in terms of cost of credit from financial institutions, a pool of qualified human capital and are able to achieve greater strategic diversification over their smaller counterparts which makes larger firms less prone to failure and also assist them in exploring other profitable ventures which improves profitability. Besides, they have the monetary resources to recruit highly skilled personnel to propel their strategic objectives. Current empirical research (e.g., Majumdar, 1997; Inmyxai and Takahashi, 2010; Kakani and Kaul, 2002) on the relationship between firms profitability and its size have all found a positive relationship which suggests that larger firms tend to be more profitable than smaller firms.

According to Symeou (2010), small firms exhibit certain characteristics which can counterbalance the handicaps attributed to their smallness. They suffer less from the

agency problem (Pi and Timme, 1993; Goddard et al., 2005) and are characterised by more flexible non-hierarchical structures, which may be the appropriate organisational forms in changing business environments (Yang and Chen, 2009). Since smaller firms are mostly managed and owned by close relatives, the possibility of management pursuing their own interest rather than the interest of their owners is very minimal. Such a relationship helps to minimise agency cost of monitoring by management and misappropriation of funds leading to improved profitability. Also, smaller firms tend to be more flexible than larger firms. They have the ability to change and adapt to the business environment which helps them to be profitable. Empirical work of Hansen and Wernerfelt (1989) on the relationship between company size and profitability found a significantly negative relationship. On the basis of this theoretical and empirical evidence, the following hypothesis is postulated:

H₁₁ THERE IS A SIGNIFICANT NEGATIVE RELATIONSHIP BETWEEN COMPANY SIZE AND PROFITABILITY.

5.4.2.2 Asset Tangibility

Another important determinant of profitability is tangibility of the firm's assets (Campello, 2005). According to Campello (2005), when assets are more tangible, they are easy to verify and repossess in an event of liquidation. Research by Haris and Robinson (2001) found a negative relationship between firms' profitability and its tangible assets. On the basis of this evidence, they argued that firms need higher proportion of intangible assets such as human capital in order to use the resources with maximum effectiveness since intangible assets such as human capital, R&D, organisational capital and goodwill can help the firm to create new products and processes (Teece and Pisano, 1998). Empirical evidence of Onaolapo and Kajola (2010) also found a negative association between asset tangibility and company profitability.

On the contrary, Braun (2003) has also demonstrated that companies with tangible assets obtain more finance from suppliers and banks at a low rate of interest. Asset tangibility lends credibility to investors' threat to take the firm to bankruptcy court and/or to dismiss its management team, affecting incentives to perform (Campello, 2005). According to Hart (1995) non-human assets help in holding a relationship together. Braun (2003) maintains that tangible assets are those that would more easily shift to the investor's control when the relationship breaks down. For most external financiers, the best way to guaranteed safe lending is through the provision of security which in most case for firms, tangible assets which could be reposes in an event non-payment of the credit. As a result some firms use tangible assets as collateral to secure external funds. Because of its ability to hold financing contracts together, external financiers are more willing to accept a reduced cost of finance. This reduction in the cost of finance because of asset tangibility means that such companies will make savings on their interest payments, which can improve profitability. For smaller firms this is seldom the case. Most external financiers hardly grant external finance to SMEs because of their lack of tangible assets. On the basis of this evidence, the following hypothesis is postulated:

H₁₂ THERE IS A SIGNIFICANT POSITIVE RELATIONSHIP BETWEEN ASSET TANGIBILITY AND PROFITABILITY.

5.4.2. 3 Financial Leverage

Financial leverage significantly affects firms profitability (see Ruland and Zhou, 2005; Onaolapo and Kajola, 2010; Akinlo and Asaolu, 2012; Ojo, 2012). According to previous studies, financial leverage affects cost of capital, ultimately influencing firms' profitability and stock prices (Higgins, 1977; Miller, 1977; Myers, 1984; Sheel, 1994). In a survey by Hittle et al. (1992) on 500 largest Over-The-Counter (OTC) firms, it was found that 11%

of sample firms had adopted targeted capital structure. However, when both taxes for corporate and equity holders were considered at the same time, financial leverage appeared not to bring significant benefits to the investors at the end (Myers, 2001). It is argued that, the presence of debt in the capital structure raises the pressure on managers to perform (Weill, 2003; Akintoye, 2008; Boodhoo, 2009). The presence of debt means that managers must work harder in order to be able to service the debt. The onus to perform will therefore be on the managers as non- performance may cause debt holders to force the company to liquidate, which will result in managers losing their jobs. It is argued that debt financing provides better incentives for managers to perform because they aim to avoid the personal costs of bankruptcy. Another influencing factor of debt financing on managers is the fact that it eliminates the moral hazard behaviour by reducing the free cash flow at the disposal of managers (Jensen, 1986). According to Sunder and Myers (1999), most profitable firms in many industries often have a tax shield and the lowest debt ratio, which benefits debt financing and improvement of the company profitability (Modigliani and Miller, 1963). Dann (1981) and James (1987) also noted that large positive abnormal returns for a firm's stockholders are associated with leverage increasing events such as stock repurchases or debt-for-equity exchanges. Bothwell et al. (1984) and Tirta (2006) postulated a positive relationship between financial leverage and profitability.

Contrary to this evidence, it is also suggested that the presence of debt on a firm negatively affects its profitability. According to Weill (2003), the presence of the debt widens the agency cost problem of the firm as it tends to introduce a new dynamics to the principal-agency relationship of the firm. Titman and Wessels (1988) observed that highly profitable firms have lower levels of leverage than less profitable firms because they first use their earnings before seeking outside capital. Similar findings were reported by Gu (1993), Sheel (1994), Sunder and Myers (1999) and Wald (1999). According to Wald (1999),

profitability, which is the most significant determinant of firms' financial leverage, negatively affects the debt to asset ratios in the heteroskedasticity tobit regression model. Sheel (1994) also supported the negative relationship between debt-to-asset ratio and non-debt tax shield or/and between firm's leverage behaviour and its past profitability. Research by Kortweg (2004) and Dimitrov and Jain (2005) found a negative association between financial leverage and profitability. On the basis of this evidence that the presence of a debt negatively affects profitability, the following hypothesis is formulated:

H₁₃ THERE IS A SIGNIFICANT NEGATIVE RELATIONSHIP BETWEEN FINANCIAL LEVERAGE AND PROFITABILITY.

5.4.2. 4 Liquidity Ratio

The availability of liquidity may be an indication that a company is forgoing the benefits of investing in profitable opportunities. Boermans and Wiilbrands (2011) argue that a firm's profitability is significantly influenced by its level of liquidity since the availability of liquidity allows the firm to meet its short term obligations on time and also take up profitable ventures. High liquidity may also hinder a company's profitability (Hvide and Moen, 2007; Ng and Baek, 2007). Tauringana and Afrifa (2013) found a negative association between liquidity and profitability. The availability of liquidity may be an indication that a company is forgoing the benefits of investing in profitable opportunities. High liquidity may also result in managers misappropriating the funds of the company. According to Jensen (1986), managers have incentives to increase the free cash flow of their companies because it is probably the only one asset they can freely control. Damodaran (2005) argues that managers have their own agendas to pursue and that cash provides them with the ammunitions to fund their pursuit. In sum, it can be argued that even though a

high level of liquidity may decrease profitability, its absence could be more dangerous to firms

On the other hand, a company that has more liquidity may have the capability of extending more credit to its customers. The offering of credit may increase sales because it can entice customers to buy more, which will maximise profitability (Garcia-Teruel and Martinez-Solano, 2010c; Gill et al., 2010). The level of liquidity within a company can help avoid the use of costly external finance. There is enormous evidence to suggest that internally generated finance is cheaper than external finance because of the problems of information asymmetry, which manifest itself in the form of adverse selection and moral hazard (Myers and Majluf, 1984; Brito and Mello, 1995). On the basis of this argument the following hypothesis is formulated:

H₁₄ THERE IS A SIGNIFICANT POSITIVE RELATIONSHIP BETWEEN LIQUIDITY RATIO AND PROFITABILITY.

5.4.2. 5 Cash flow

It is argued that the availability of cash flow leads to higher investment in working capital (Banos-Caballero et al., 2013). The availability of cash flow leads to higher investment in working capital (Banos-Caballero et al., 2013) and profitability (Autukaite and Molay, 2011). An increase in working capital implies that more cash is invested in working capital and thus reduces cash flows. Firms with significant working capital requirements will find that their working capital grows as they do, and this working capital growth will reduce their cash flows.

With available cash flow holdings, firms are able lengthen their cash conversion cycle, which can improve company profitability by increasing sales (Deloof, 2003). It is also

argued that cash flow availability allows a company to extend more credit to customers, which may entice them to purchase more, even in times of low demand. The availability of cash flow may also lead to an increase in investment of accounts receivable and inventory day held which may lead to higher profitability as firms are also able to reduce their transactional cost of paying bills according to Ferris (1981). Ferris (1981), suggests that larger inventories can reduce supply and collection cost on the firm as both suppliers and customers in the long run work towards better time management for delivery / payment to optimise both inventory and cash levels (Paul and Boden, 2008). For instance, a buyer might prefer to pay his debt monthly instead of immediate payment cycle from the delivery schedule (Peterson and Rajan, 1997). Firms are able to reduce the cost of warehousing particularly when the customer has the ability to carry the inventory. Similarly, with available cash holdings, firms could take advantage of available discounts of buying in bulk purchase, which may reduce the procurement cost of production and the cost of sales of the product, which will reduce the overall price of the product leading to more profitability. According to Banos-Caballero et al. (2013), firms with enough cash flow take advantage of suppliers' cash discount by paying immediately for supplies. On the basis of this argument the following hypothesis is formulated:

H₁₅ THERE IS A SIGNIFICANT POSITIVE RELATIONSHIP BETWEEN CASH FLOW AND PROFITABILITY.

5.4.2. 6 Growth opportunities

A number of studies (e.g., Deloof, 2003; Shin and Soenen, 1998) demonstrate the importance of growth opportunity to firms' profitability. It is generally accepted that stock returns reflect the company's growth opportunities. As is often argued, growth looks like a necessary ingredient for corporate profitability and the creation of shareholder value (Shin

and Soenen, 1998). Margaritis and Psillaki (2010) suggest that firms with low risk use sales growth as an indicator of their future growth opportunity to substitute for high risk (high return) investments which improves their profitability.

According to them, compared to high growth firms, low growth firms have fewer opportunities to substitute low risk for high risk (high return) investments; as a result they could improve their profitability by carrying more debt in their capital structure since they incur low agency cost of debt. Deloof (2003) found positive association between growth opportunity and profitability. On the basis of this argument the following hypothesis is formulated:

H₁₆ THERE IS A SIGNIFICANT POSITIVE RELATIONSHIP BETWEEN GROWTH OPPORTUNITIES AND PROFITABILITY.

5.5 CONCLUSION

The chapter translated the various theoretical and empirical studies on the relationship between working capital management and profitability into testable hypothesis. Sixteen hypotheses were discussed. The first four hypotheses examine the relation between working capital, its components (AR, AP and INV) and profitability as determined by most previous studies. The rationale of presenting these hypotheses is to determine if the relationship between working capital management, its components (AR, AP and INV) and profitability may vary according to each component. The chapter presented eight testable hypotheses to determine whether the relations between working capital management, its components (AR, AP and INV) and profitability was moderated by the interaction of contingent factors (environment, resource and management) as postulated in the contingency framework. The last four hypotheses were developed to determine the impact of firm and corporate governance characteristics on firms' profitability. These variables

have been found relevant by previous studies to influence the relationship between working capital management on profitability.

CHAPTER SIX

RESEARCH METHODOLOGY

6.1 INTRODUCTION

This chapter describes the research method adopted to address the hypotheses formulated in Chapter 5. The section provides a detailed description of the data methodology adopted, rational for the choice of data and methodology. The remainder of the chapter is organised as follows. Section 6.2 presents a description of the data and procedure for sample selection. In this section, the various variables employed in establishing the hypotheses used on the effect of WCM and its components on profitability of firms will be discussed. Section 6.3 presents a discussion on the tool for data analysis, whilst section 6.4 concludes the chapter.

6.2 DATA DESCRIPTION AND SAMPLE SELECTION

The population for the study is taken from listed companies on the main market of London Stock Exchange (LSE) for the period 2001 to 2011. The choice of the period was influenced by UK Late Payment of Commercial Debts (Interest) Act 1998, which was subsequently amended to bring it into line with the EU Late 2002 Payment directive to entitle firms a statutory right to claim interest on late payment of trade debts. In this context, the data were extended to cover the period of the old and new late payment legislation.

To arrive at the sample, the study excluded financial companies. Out of a total list of 1,339 companies listed on the main market of the London stock exchange (LSE) as from the 28th September, 2012, as detailed in step 1 of table 5, financial companies consisted of 583 firms, representing about 44 per cent of the overall listed companies. Among the 583 listed

firms were 37 banks, 1 convertible bonds, 17 company bonds, 47 debenture loans, 376 equity investment instruments, 53 general financials, 14 life insurance companies, 13 non-life insurance companies, and 25 non-equity investment instruments. These financial companies were excluded because financial companies have different accounting regulations to non-financial companies (Deloof, 2003). Also financial services firms' financial characteristics and investment in working capital are largely different from non-financial companies (Falope and Ajilore, 2009). Furthermore, the exclusion of the financial services companies allow for easy comparability with prior studies (e.g., Deloof, 2003; Falope and Ajilore, 2009; Lazaridis and Tryfonidis, 2006). In the second step (step 2) of table 5, the study segmented the rest of the 755 non-financial firms based on Gary et al. (1995) industrial groupings since most of the firms were closely related and share similar characteristics. Industry 1 = metals, building materials, and construction, industry 2 = engineering, industry 3 = consumer goods and services and industry 4 = oil, chemicals, and mining. These distributions are by economic sector. In all, industry 1 had 56 firms, 106 for industry 2, 449 for industry 3 and 144 for industry 4.

Finally, to be included in the final sample, companies must have their financial statement for the entire period under consideration, which is from 1st of January 2001 to 31st of December 2011 inclusive. Companies with negative sales, negative assets, or missing substantial yearly figures were also removed from the sample. The two criteria were necessary to allow for easy comparability with similar studies and to permit the use of balanced panel data, which has the advantage of more degrees of freedom and less multicollinearity among variables (Gujarati, 2003). As a result of the strict application of these two criteria the final sample was narrowed down to 225 companies which represent 30 per cent of the total number of non-financial companies listed on LSE as shown in step 3 of Table 5.

Table 5: Summary of the Sample Selection Procedure

Step 1: Sector composition of all listed companies on the London Stock Exchange main market

All Companies	Total number of companies	Percentage (%) of the population
Aerospace & Defence	11	0.82
Alternative Energy	2	0.15
Automobiles & Parts	12	0.90
Banks	37	2.77
Beverages	6	0.45
Chemicals	20	1.49
Company bonds	17	1.27
Construction & Materials	26	1.94
Convertible bonds	1	0.07
Debenture loans	47	3.51
Electricity	12	0.90
Electronic & Electrical Equipment	20	1.49
Equity Investment Instruments	376	28.10
Fixed Line Telecommunications	19	1.42
Food & Drug Retailers	13	0.97
Food Producers	26	1.94
Forestry & Paper	1	0.07
Gas, water & multiutilities	7	0.52
General Financials	53	3.96
General Industrials	16	1.20
General Retailers	37	2.77
Health Care Equipment & Services	10	0.75
Household Goods & Home Construction	15	1.12
Industrial Engineering	25	1.87
Industrial Metals	15	1.12
Industrial Transportation	17	1.27
Leisure Goods	6	0.45
Life insurance	14	1.05
Media	39	2.91
Mining	40	2.99
Mobile Telecommunications	7	0.52
Non-equity Investment Instruments	25	1.87
Nonlife Insurance	13	0.97
Oil & Gas Producers	42	3.14
Oil Equipment, Services & Distribution	10	0.75
Personal Goods	11	0.82
Pharmaceuticals & Biotechnology	19	1.42
Preferences	29	2.17
Real Estate	9	0.67
Real Estate Investment & Services	43	3.21
Real Estate Investment Trusts	20	1.49
Software & Computer Services	27	2.02
Support Services	71	5.31
Technology Hardware & Equipment	22	1.64
Tobacco	2	0.15
Travel & Leisure	48	3.59
Total	1338	100

Less

Banks	37		
Convertible bonds	1		
Company bonds	17		
Debenture Loans	47		
Equity investment	376		
General Financials	53		
Life Insurance	14		
Non-life insurance	13		
Non-equity Investment Instruments	25		
Total Financial companies	583	43.57	
Total Non-financial companies	755	56.43	

Step 2: Industrial classification of all non-financial companies listed on the London Stock Exchange (main market)

All Companies	Industry 1	
	Total number of firms	Percentage (%) of the population
Construction Materials	26	
Household Goods & Home Construction	15	
Industrial Metals	15	
Total	56	14.04
	Industry 2	
Industrial Engineering	25	
Technology Hardware & Equipment	22	
General Industrials	16	
Electronic & Electrical Equipment	20	
Automobiles & Parts	12	
Aerospace & Defence	11	
Total	106	59.47
	Industry 3	
Beverages	6	
Electricity	12	

Fixed Line Telecommunications	19	
Food Producers	26	
Gas, water & multiutilities	7	
General Retailers	37	
Health Care Equipment & Services	10	
Industrial Transportation	17	
Leisure Goods	6	
Media	39	
Mobile Telecommunications	7	
Personal Goods	11	
Preferences	29	
Real Estate	9	
Real Estate Investment & Services	43	
Real Estate Investment Trusts	20	
Software & Computer Services	27	
Support Services	71	
Forestry & Paper	1	
Alternative Energy	2	
Tobacco	2	
Travel & Leisure	48	
	Total	449
		59.47

Industry 4

Chemicals	20	
Food & Drug Retailers	13	
Mining	40	
Oil & Gas Producers	42	
Oil Equipment, Services & Distribution	10	
Pharmaceuticals & Biotechnology	19	
	Total	144
		19.07

Step 3: Industrial classification of all non-financial companies listed with full data for the period

Industry	Total number of firms	Percentage (%) of the population
Industry 1	45	20.00
Industry 2	36	16.00
Industry 3	116	51.56
Industry 4	28	12.44
	Total	100
Total Non-financial companies listed with full data for the period	225	29.80

This conforms to the proposed percentage guidance on a representative sample by Sekaran (2000) of between 30 and 500. Field (2005) recommends that the most common rule of thumb in regression analysis is 10 or 15 cases per each predictor in the model. Based on the number of predictors to be used and the total population of listed companies on the main market of London stock exchange, a sample size of 225 companies conforms to the guidance.

6.2.1 Data and Sources

These companies were extracted from three data sources: Thompson one Analytics, Analyse Major Databases from European Sources (AMEDEUS) and Boardex. Majority of the database involving both accounting and financial performance figures and ratios were extracted from Thompson one Analytics, Analyse Major Databases from European Sources (AMEDEUS). This database contains both annual accounts and management details of about 330,000 public and private companies in 41 European countries, including UK. However, data on corporate governance variables, were also obtained from Boardex.

6.2.2 Dependent Variables

Various accounting measures of profitability have been adopted by several empirical studies on the relationship between working capital management and profitability. Tauringana and Afrifa (2013) on a sample of 133 small to medium-size enterprises in UK used return on assets (ROA) as the measure of performance. Lazaridis and Tryfonidis (2006) also employed gross operating profit as a measure of companies' profitability. Vishnani and Shah (2007) used return on capital employed to represent companies' profitability. Garcia-Teruel and Martinez-Solano (2007) used Return On Assets (ROA), whilst Velnampy and Niresh (2012) also used Return On Equity (ROE) as measures of company profitability. However, in spite of their usage, accounting measures have been

criticised as measures that are easily manipulated by management (Mangena and Tauringana, 2008) and as a result they are classified as poor indicators of profitability for firms (Ross et al., 2002).

In spite of these criticisms, accounting based measures of company profitability have widely been used in the WCM literature (Padachi et al., 2010; Hayajneh and Yassine, 2011; Mojtahedzadeh et al., 2011). ROA is used as an accounting measure of profitability because it is an indicator of the performance of management with regard to the given resources. Another reason for the use of ROA is its ability to remove size effects, therefore allowing for inter-industry comparison (Lev and Sunder, 1979). Besides, ROA has more desirable distributional properties than other accounting measures such as return on equity (Core et al., 2006). Furthermore, its adoption allows easy comparability with similar studies (e.g., Deloof, 2003; Tauringana and Afrifa, 2013). Saleem and Rehman (2011) calculated ROA as profit before Tax (PBT) over total assets. Definitions of all continuous variables adopted for the study are found in table 6.

6.2.3 Independent variables

The study has two sets of independent variables. The first set of independent variables include the traditional WCM (measured by cash conversion cycle) and its components (accounts payable in days, accounts receivable in days and inventory held in days) adopted by previous studies (Deloof, 2003; Garcia-Teruel and Martinez-Solano, 2007; Tauringana and Afrifa, 2013). The cash conversion cycle represents the average timing difference between when a firm pays for its suppliers and the time it takes to recoup the amount invested in debtors and inventory. It is calculated as (inventory held in days + accounts receivable in days - accounts payable in days). Accounts receivable in days is the average number of days the firm takes to collect receivables from customers. This is calculated by

dividing accounts receivables by sales multiplied by 365 days. Accounts payable in days measures the average number of days it takes a firm to pay trade creditors. This is computed by dividing accounts payables by cost of sales multiplied by 365 days. Finally, inventory held in days measures the average number of days a company is holding the inventory. It is calculated by dividing inventory by cost of sales multiplied by 365 days.

The second set of variables includes the set of contingent variables. These variables moderate the relationship between working capital management, its components (AR, AP and INV) and profitability. These contingencies are classified into three components by Luthan and Steward (1977): Environmental (E), Resources (R) and Management (M) variables of the firm. Environmental (E) variables include factors that affect the organisation, but are beyond the direct or positive control of the organisation's resource managers Churchman (1968). Porter (1980) identified firms' industrial structural characteristics as a main determinant of firms' profitability. Against this backdrop, the study used industrial characteristics as a proxy for environmental variable. Industries were categorised into four industrial characteristics based on Gary et al. (1995) industrial groupings since most of the firms were closely related and share similar characteristics. The study proxy 1 = Metals, building materials, and construction, 2 = Engineering, 3 = Consumer goods and services and 4 = Oil, chemicals, and mining.

Table 6. Definition of variables included in the regression models

Variables	Acronym	Measurement
<i>Profitability measure</i>		
Return on total assets	ROA	Earnings before interest and tax (EBIT) divided by its total assets (TA) at the end of the financial year
Management variables	M	Concepts and techniques expressed in policies, practices and procedures used by the manager to operate on available resource variables in defining and accomplishing system objectives (Luthans and Stewards, 1977). This include it corporate governance and working capital policies
<ul style="list-style-type: none"> • <i>Board size</i> 	Board size	The total number of executive and non-executive members serving on the board of a company
Environmental Variables:	E	These factors affect the organisation , but are beyond the direct or positive control of the organisation 's resource managers Churchman (1968).
<i>Industry</i>	I	Collection of firms engaged in a particular kind of commercial activity
<ul style="list-style-type: none"> • Industry dummy 1 	1	Collection of Metals, Building materials and Construction firms
<ul style="list-style-type: none"> • Industry dummy 2 	2	Collection of Engineering Firms
<ul style="list-style-type: none"> • Industry dummy 3 	3	Collection of Consumer goods and Services firms
<ul style="list-style-type: none"> • Industry dummy 4 	4	Collection of Oil, Chemicals and Mining firms
Resource Variables	R	These are tangible and intangible factors over which management has more direct control and on which it operates to produce desired changes in the organisation al system or its environmental supra-system (Churchman,1968).
<ul style="list-style-type: none"> • <i>Cash flow</i> 	CFL	Log of Earnings before interest and tax (EBIT) plus depreciation (D)
Working Capital Management component		
<ul style="list-style-type: none"> • Inventory holding period 	INV	The average number of days a company is holding the inventory. It is calculated by dividing inventory by cost of sales multiplied by 365 days
<ul style="list-style-type: none"> • Average days Receivables 	AR	The average number of days the firm takes to collect receivables from customers. This is calculated by dividing accounts receivables by sales multiplied by 365 days
<ul style="list-style-type: none"> • Average days Payables 	AP	The average number of days it takes a firm to pay trade creditors. This is computed by dividing accounts payables by cost of sales multiplied by 365 days.
<ul style="list-style-type: none"> • Cash Conversion Cycle 	CCC	Cash Conversion Cycle is calculated as (INV+AR-AP), which represents the average timing difference between when a firm pays for its suppliers and the time it takes to recoup amount invested in debtors and inventory
Control variables		
<ul style="list-style-type: none"> • <i>Firm size</i> 	FIRMSI ZE	The natural log of firm's turnover (TO) at the end of the financial year
<ul style="list-style-type: none"> • <i>Financial Leverage</i> 	LEV	Ratio of total debt (TD) divided by capital (C) at the end of the financial year
<ul style="list-style-type: none"> • <i>CEO Tenure</i> 	Tenure	The Total number of years that the CEO has been in office
<ul style="list-style-type: none"> • <i>Liquidity Ratio</i> 	CR	Current assets (CA) divided by current liabilities (CL) at the end of the financial year
<ul style="list-style-type: none"> • <i>Assets tangibility</i> 	ATAN	<i>The ratio of fixed assets (TFA) divided by total assets (TA) at the end of the financial year</i>
<ul style="list-style-type: none"> • <i>Growth opportunity</i> 	SGRTH	The rate of increase in sales (S) of firms between periods. Current sales –previous sales / previous sales

Resource (R) variables include those tangible and intangible factors over which management has more direct control and on which it operates to produce desired changes in the organisational system or its environmental supra-system (Churchman, 1968). Grant (1991) identified firms' cash flow as a key profitability related to resources of the firm. Firms' cash flow is measured as the log of profit before interest and tax plus depreciation. The study adopted firm's cash flow as a proxy for the firm's resource variable.

Management (M) variables includes those concepts and techniques expressed in policies, practices and procedures used by the manager to operate on available resource variables in defining and accomplishing system objectives (Luthans and Steward, 1977). Company's board size is one of the management variables that influence profitability (Dalton and Dalton, 2005). Company's board size is measured as the total number of executive and non-executive members serving on the board of a company. Consequently, this study adopted company's board size as a proxy for management variable.

6.2.4 Control variables

The study includes other variables that may influence the effect of WCM on companies' profitability. These variables have been included in the study in order to prevent any possibility of omitted bias (see Bartov et al., 2000). Haniffa and Hudaib (2006) suggest that firm size may be related to firm profitability. Small firms may have less power than large firms; hence they may find it difficult to compete with the large firms particularly in highly competitive markets (see Majumdar, 1997). Larger firms have more advanced and sophisticated marketing skills, research capabilities and product development experience, which together form the foundation of higher profitability (Dewar and Dutton, 1986). Firm size is measured as the book value of total assets, which is logged to normalize the variable. Mathuva (2010), found a positive relationship between firm size and profitability.

The financial leverage has a significant effect on companies' profitability (Ruland and Zhou, 2005). The presence of debt in the capital structure raises the pressure on managers to perform (Akintoye, 2008). Dimitrov and Jain (2005) found a negative association between financial leverage and profitability. Leverage (LEV) is measured as the ratio of total debt divided by capital at the end of the financial year. The level of liquidity within a company may greatly influence profitability. A company that has more liquidity may have the capability of extending more credit to its customers. High liquidity may also hinder a company's profitability (Ng and Baek, 2007). Tauringana and Afrifa (2013) found a negative association between liquidity and profitability. Liquidity ratio (CR) is measured as current assets divided by current liabilities at the end of the financial year. Asset tangibility is considered to be one of the major determinants of companies' profitability as argued by Onaolapo and Kajola (2010). Research by Braun (2003) has shown that companies with tangible assets obtain more finance from suppliers and banks. Asset tangibility (ATAN) is measured by the ratio of tangible fixed assets/total assets. Deloof (2003) found a positive association between asset tangibility and profitability. Growth opportunities could also affect the firm's profitability, as has been shown in various empirical studies (Deloof, 2003; Shin and Soenen, 1998). It is generally accepted that stock returns reflect the company's growth opportunities. As is often argued, growth looks like a necessary ingredient for corporate profitability and the creation of shareholder value (Shin and Soenen, 1998). Growth opportunities (SGRTH) is measured by the ratio $(sales_1 - sales_0)/sales_0$. Deloof (2003) found positive association between growth opportunity and profitability. Chief Executive Officer (CEO) tenure is a key management variable that influences profitability (Farooque et al., 2007). CEO tenure is measured as the total number of years a CEO has been in office.

6.3 DATA ANALYSIS METHODS

The aim of this section is to briefly explain the various methods that have been chosen to analyse the financial data. According to Saunders et al. (2003) and Zikmund (2003), the prime objective of undertaking any study is to provide information in order to help answer the research question. In order to generate the relevant information, raw data is gathered, which is then transformed with the aid of analytical methods to generate the relevant information for decision making (see Davis, 1996). Zikmund (1997) identified three main factors that guide the researcher in the choice of a particular statistical analysis in order to arrive at the correct conclusions. These include: (1) the type of question to be answered; (2) the number of variables and (3) the scale of measurement.

The objective of the study is to improve on the understanding of the relationship between working capital, its components and profitability of firms. The central hypothesis is that the interaction of environment, resources and management variables helps to explain differences in profitability among firms. This connects with the contingency theoretical framework and other empirical research devoted to the analysis of working capital management and profitability. The three research objectives are re-stated as follows:

1. To determine whether there is a relation between working capital management, its components (accounts receivable in days, accounts payable in days and Inventory days) and profitability of UK firms as per extant research.
2. To determine whether the effect of working capital management on profitability is contingent on the interaction of environmental, resource and management variables of UK firms.
3. To determine whether the effect of the components of working capital management (accounts payables in days, accounts receivables in days, and inventory held in

days) on profitability is contingent on the interaction of environmental, resource and management variables of UK firms.

In order to achieve the above objectives, the study adopts descriptive statistics, bivariate analysis and multivariate analysis.

6.3.1 Descriptive Statistics

Descriptive statistics is described as the starting point in any statistical analysis because it helps in detecting any abnormalities in the data collected. As argued by Quartey (2003), descriptive analysis is particularly useful because it is a holistic approach that gives preliminary but useful characteristics of the data. In chapter eight of this research, descriptive analysis including: calculation of the mean, standard deviation, maximum and minimum values will be presented.

6.3.2 Bivariate Analysis

In order to test association among the variables, the study employs a bivariate analysis (Zikmund, 2003). According to Zikmund (1997), bivariate analyses test the hypothesis that the association between two or more variables differ. The measures of association on the other hand refer to values designed to represent co-variation between variables. The study adopts the Pearson's correlation coefficient to estimate this association between the individual variables. The Pearson's correlation considers the joint variation in two measures (Ghauri and Gronhaug, 2005). The test helps to determine the strength of the relationship between two variables. The coefficient of correlation assumes the value ranging from -1 to $+1$. A variable with coefficients closer to either -1 or $+1$ indicates a stronger association (negative or positive) whilst a correlation coefficient of zero indicates that the variables are unrelated. The study employs correlation matrix to examine whether the inclusion of the various independent variables in the models will not create any

problems of multicollinearity among the models. The results of this analysis are presented in chapter eight of the study.

6.3.3 Multivariate Analysis

Multivariate analysis is a statistical method that is used to simultaneously investigate two or more variables (Zikmund, 2003). Although the bivariate correlation results may show the relation among the individual variables, it fails to take into account each variable's correlation with all other explanatory variables. Multivariate analysis is employed because of the inherently multidimensional nature of dependent variable(s). As a result the main analysis of this study will be derived from appropriate multivariate models, estimated using econometric analysis. Econometric analysis is the most popular method in studying the impact of working capital management on profitability. The reasons for using econometric analysis can be roughly summarised as follows. Firstly, it can determine whether the independent variables explain a significant variation in the dependent variable. Secondly, it can determine how much of the variation in the dependent variable can be explained by the independent variables. Thirdly, it can control for other independent variables when evaluating the contributions of a specific variable or set of variables. And finally, it can predict the values of the dependent variable.

6.3.4 Econometric Analysis

The study adopts panel data analysis in order to investigate its primary research questions on the relationship between working capital, its contingencies and profitability. The technique sets out repeated observations over time on a cross section of firms, individuals, countries etc. It involves time series observation of a number of individuals, firms, countries etc. and following them over time. Panel data technique has two dimensions

(time series and cross section) which help to provide sufficient information about the data. Panel data has a number of advantages over regular time-series or cross section studies.

Firstly, it controls for individual heterogeneity. Unlike time-series and cross section techniques, panel data suggests that individual firms are heterogeneous and hence does not run the risk of obtaining biased results (see Baltagi, 2005). Secondly, panel data provides more informative data, adequate variability, less collinearity, more degrees of freedom and more efficiency (Baltagi, 2005). Time-series studies are always suffered from multicollinearity. For example, in a study carried out by Baltagi and Levin (1992) about the demand for cigarettes in the USA for 46 states over the years of 1962-1992, there is high collinearity between price and income in the aggregate time series for the USA. This is less likely with a panel across American states since the cross-section dimension adds a lot of variability, adding more informative data on price and income. In fact, the variation in the data can be decomposed into variation between states of different sizes and characteristics, and variation within states. The former variation is usually bigger. With additional, more informative data one can produce more reliably.

Thirdly, panel data can better detect and measure effects that simply cannot be observed in pure cross-section data (Hsiao, 2003). Panel data, is able to study the dynamics of adjustment over time in a given set of data. Finally, panel data can be used, at least under certain assumptions, to obtain consistent estimators in the presence of omitted variables (Wooldridge, 2002). These omitted or unobserved variables are usually consigned to the error term when using cross-section data. If these omitted or unobservable variables are correlated with dependent variables, then ordinary least squares (OLS) will provide biased estimates. This is a perennial problem faced by investigators who only have cross-section data. If panel data were available on individuals over time, this may provide a solution to the problem.

Despite the various advantages of using panel data analysis, it also has certain limitations. Firstly, designing panel surveys as well as data collection and data management could be very expensive and difficult. Secondly, measurement errors may arise because of faulty responses due to unclear questions, memory errors, deliberate distortion of responses, inappropriate informants, misreporting of responses and interviewer effects. Thirdly, there is a selectivity problem including self-selectivity, non-response and attrition. However, these limitations are associated with survey data. Since the data for this study are secondary data it is considered the above mentioned limitations do not have serious impact on the validity of this study.

A classical panel data regression is presented as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{it1} + \beta_2 X_{it2} + \dots + \beta_k X_{itk} + \varepsilon_{it} \quad (6.1)$$

$$= \beta_k X'_{it} + \varepsilon_{it} \quad (6.2)$$

Where Y_{it} is dependent variable of the observation. The subscript i denotes the n th company ($i = 1 \dots 225$) which represents the cross section dimension whereas the subscript t denotes the t^{th} year ($t=1, \dots, 11$) which also represents the time-series dimension. ε_{it} denotes the idiosyncratic shocks β_1 β_2 and β_k are vectors of the parameters to be estimated.

6.3.4.1 One Way Error Component Regression Model

Panel data regression differs from a regular time-series or cross section regression in that the data allows the control of unobserved heterogeneity constant over time. Unlike the Ordinary Least Square (OLS) regression, panel data regression utilizes a one-way error component model which takes into consideration the individual effect of the disturbance term. This is presented as follows:

$$\varepsilon_{it} = \eta_{it} + v_{it} \quad (6.3)$$

Where η_{it} is the unobserved company effects (fixed effects) and v_{it} the idiosyncratic shocks β_1 and β_2 are vectors of the parameters to be estimated. However, since the two components of ε_{it} are assumed to be independent of each other and since η_{it} is not dynamic across time but varies across individual companies, a two-way error component model will be used for the study. This will take into consideration both the individual effect and the time effect of the estimation. The two-way error component model is presented as follows:

$$\varepsilon_{it} = \eta_i + \mu_{it} + \varepsilon_{it} \quad (6.4)$$

Where μ_{it} represents the any specific time effects

Two common specifications are developed to deal with such unobserved constant individual effect (η_{it}). These include Random effects and Fixed effects.

In the model

$$= \beta_k X'_{it} + \varepsilon_{it} \quad (6.2)$$

$$\varepsilon_{it} = \eta_i + v_{it} \quad (6.3)$$

We assumed that average mean of the ε is zero. It is further important that η_i and X_{it} are uncorrelated

$$E(\varepsilon_{it}) = 0;$$

$$E(\eta_i / X_{it}) = \mathbf{0}$$

6.3.4.2 Fixed Effects (FE)

The formulation of the FE model assumes that differences across unit can be captured in differences in the constant term (Greene, 2003). It is assumed in the FE model assumes that the slope coefficients are constant for all firms, but the intercept varies across firms. Therefore, η_i in equation (6.3) is assumed to be a group-specific constant term which assumed to have fixed parameters to be estimated. The FE specification assumes that the individual effects of η_{it} are correlated with the regressors:

$$E(\varepsilon_{it}) = 0; E(\eta_t / X_{it}) \neq \mathbf{0}.$$

Therefore, equation (6.2) can be rewritten as follows:

$$\begin{aligned} E(Y_{it}/X_{it}) &= \beta_k X'_{it} + E(\eta_i / X_{it}) + E(v_{it} / X_{it}) \\ &= \beta_k X'_{it} + E(\eta_i / X_{it}) \neq \beta_k X'_{it} \end{aligned} \tag{6.5}$$

This clearly demonstrated that OLS and the Random Effect estimator are inconsistent and biased.

In order to estimate using a separate intercept for each individual in the OLS model, then,

$$\eta_i = \hat{y}_i - \hat{x}'_i \beta - \hat{v}_i \tag{6.6}$$

The transformed **within- group** model of the OLS estimator for the β parameters could be presented as follows:

$$y_{it} - \bar{y}_i = (x_{it} - \bar{x}_i)' \beta + (v_{it} - \bar{v}_i) \quad (6.7)$$

Therefore, from the model, using the FE or within-group estimator, one can only estimate the effects of the variables which change over time. Hence for the FE estimator to be unbiased, X_{it} in all the periods should not be correlated with the v_{is} in all the periods.

$$E(v_{is}, X_{it}) = 0; \quad s = 1, \dots, T, \quad t = 1, \dots, T$$

When this condition is satisfied by X_{it} , the model becomes strictly exogenous. An advantage of FE is that there is no need to assume that the effects are independent of (ε_{it}) because it allows the unobserved individual effects to be correlated with the included variables. On the other hand, it has the disadvantage of not being able to estimate the effect of any time invariant variable like location. Therefore, any time invariant variable is wiped out by the deviations from means transformation. More so, the model suffers from a large loss of degree of freedom because of estimating $(N-1)$ extra parameters.

6.3.4.3 Random Effects (FE)

Unlike the fixed effects model where inferences are conditional on the particular cross-sectional units sampled, an alternative formulation is the RE model. The model becomes more efficient than FE estimator if it can be assumed that firm effects are randomly distributed across firms. Baltagi (2008) suggests that loss of degrees of freedom can be avoided when we assumed randomisation of η_{it} . Under the RE assumptions, (η_{it} or

$\boldsymbol{\eta}_{it} + \boldsymbol{v}_{it}$) is uncorrelated with X_{it} . Therefore, the generalised least squares (GLS) estimator of Balestra and Nerlove (1966) can be used on the basis of consistent estimate of Ω .

$$\hat{\beta}_{RE} = \left(\sum_{i=1}^N X_i' \hat{\Omega}^{-1} X_i \right)^{-1} \sum_{i=1}^N X_i' \hat{\Omega}^{-1} y_i \quad (6.7)$$

However, the estimate could also be used for OLS with corrected standard of errors should the assumption of the RE model hold. The estimator of the OLS could be given as follows:

$$\hat{\beta}_{OLS} = \left(\sum_{i=1}^N X_i' X_i \right)^{-1} \sum_{i=1}^N X_i' X_i \quad (6.8)$$

A consistent estimate of variance of the OLS estimator is given as follows under more general conditions.

$$Var(\hat{\beta}_{OLS}) = \left(\sum_{i=1}^N X_i' X_i \right)^{-1} \sum_{i=1}^N X_i' \hat{u}_i \hat{u}_i' X_i \left(\sum_{i=1}^N X_i' X_i \right) \quad (6.9)$$

Where

$$\hat{\varepsilon}_i = y_i - X_i \hat{\beta}_{OLS}$$

Also, the **between** estimator could also be classified as another unbiased estimator. This is the OLS estimator in the model.

$$\bar{y}_i = \bar{x}_i \boldsymbol{\beta} + \varepsilon_{it}$$

$$\bar{y}_i = \frac{1}{T} \sum_{t=1}^T y_{it} \quad (6.10)$$

However, the RE has its advantages and disadvantages. One of its advantages is that it enables the researcher to extract information from a weighted average of the within-group and between-group estimators (Gyapong, 1986; Greene, 1997). On the other hand, on the downside, Hsiao (2003) suggests that RE model requires the need to make assumptions about the pattern of correlation between the effects and the included explanatory variables.

6.3.4.4 Relationship between Random Effects and Fixed Effects Estimators

On the transformed regression model, the estimator of RE could be estimated using OLS

$$y_{it} - \theta \bar{y}_i = (x_{it} - \theta \bar{x}_i)' \beta + (v_{it} - \theta \bar{v}_i) \bar{x}_i \quad (6.11)$$

Where θ is estimated as

$$\theta = 1 - \sqrt{\frac{\sigma_v^2}{\sigma_v^2 + U\sigma_\eta^2}}$$

Therefore as $\theta \rightarrow 1$ ($\frac{\sigma_\eta^2}{\sigma_v^2} \rightarrow \infty$ and /or $U \rightarrow \infty$), RE estimator become equivalent to FE estimator in the estimation. On the other hand, as $\theta \rightarrow 0$, ($\sigma_\eta^2/\sigma_v^2 \rightarrow 0$), RE becomes equivalent to OLS estimator. As a result, in order to estimate the RE estimator using GLS estimator, the ratio $\frac{\sigma_v^2}{\sigma_v^2 + U\sigma_\eta^2}$ is all that is required.

6.3.4.5 Empirical Studies

Based on the arguments above, the following panel data models below are used to estimate the relationship between working capital, its contingencies and profitability. Panel data technique has been adopted because as argued above, it has the advantage of more degrees of freedom, less multicollinearity among the explanatory variables, improved efficiency of econometric estimates (Begona, 1997) and above all controls for the unobservable heterogeneity among the sample since they can be observed through time.

The first equation below (1), report a direct relationship between working capital and profitability as estimated by previous studies of (Deloof, 2003; Tauringana and Afrifa, 2013) without any interactive effect, while the second (2), reports the relationship with the introduction of the interactive term.

$$PERFORMANCE_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it} + V_{it} + \varepsilon_{it} \quad (6.12)$$

$$PERFORMANCE_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it} + \beta_3 XZ_{it} + V_{it} + \varepsilon_{it} \quad (6.13)$$

Where:

PERFORMANCE is the dependent variable which is measured using return on assets (ROA); **X** variables include cash conversion cycle (CCC), accounts payable in days (AP), accounts receivable in days (AR), inventory held in days (INV). **Z** represents control variables (firm size, cash flow, gearing, assets tangibility, tenure, sales growth and industry) that may influence companies' performance. **XZ** represents the interactive term

(environmental, resource and management variables) with the main variables of working capital management. V_{it} is the unobserved company effects (fixed effects) and ε_{it} the idiosyncratic shocks β_1 and β_2 are vectors of the parameters to be estimated. The subscript i denotes the n th company ($i = 1 \dots 225$), and the subscript t denotes the t^{th} year ($t=1, \dots, 11$).

6.3.4.6 Hausman Test

The Hausman test examines whether there is significant correlation between the unobserved individual-specific random effects and the regressors. In other words the test examines whether the unobserved heterogeneity is correlated with the regressors. When they are correlated, the FE estimator becomes consistent while the RE estimator becomes inconsistent. On the other hand, if they are not correlated, both estimators become consistent with FE more efficient. For instance, in an error component regression model, a critical assumption is that $E(\eta_{it} / X_{it}) = 0$. This is of much relevance to the model given that the disturbance term contains an individual effect of (η_{it}) which is unobserved and correlated with X_{it} . Clearly, when $E(\eta_t / X_{it}) \neq 0$, the OLS estimator $\hat{\beta}_{between}$ becomes inconsistent and biased for β . However, the transformation within takes off the disturbance term contains an individual effect of (η_{it}) , leaving the within estimator β_{within} consistent and unbiased for β .

The estimation of the Hausman test is given by

$$H = (\hat{\beta}_{within} - \hat{\beta}_{between})' [Var(\hat{\beta}_{within} - \beta_{between})]^{-1} (\hat{\beta}_{within} - \hat{\beta}_{between})$$

RE is rejected when H is large as $H \sim X_k^2$ with k being the number of elements in β .

Against this background, the study estimated the Hausman test. Evidence of the test reveals that the regressors are uncorrelated with the unobserved heterogeneity in all the

models which suggests no significant difference the RE estimator and the FE estimator. As a result, using STATA statistical software, the study adopted the RE estimator given that the findings of the test supports this method.

6.3.5 Sensitivity Analysis

In order to reduce the risk of biased estimators from possible multicollinearity, heteroscedasticity and serial correlation, the study carried out sensitivity analysis of the regression models by adopting a correlation matrix for all the continuous variables for possible presence of multicollinearity. The log transformation of both the dependent and independent variables was undertaken in order to normalise the distribution of the data. Because the data for this research is a cross-section of firms, two critical assumptions associated with disturbance term in the error component model. Therefore in a classical linear regression model, we assumed that mean of the disturbances is zero and variance of the errors is constant σ^2 .

$$E(\mu_t) = 0$$

$$\text{var}(\mu_t) = \sigma^2 < \infty$$

When both assumptions are violated, the estimations of the regression coefficients are still unbiased and consistent, but not efficient (Baltagi, 2005). This is often referred to as homoscedasticity. In other words heteroscedasticity occurs when the errors do not have a constant variance. Heteroscedasticity arises when there is a wide range of the (X) variables and when using grouped data. This is because, in this case each observation is an average for a group and the groups are of different sizes (Greene, 2000). According to Baltagi (2005), one approach to test for heteroscedasticity is to model these variances and/or correlations. But this can be difficult, particularly for short time period, which is typical for

panel data. For instance, suppose that variable G_t is related to the variance of the error term.

$$\text{var}(\mu_t) = \sigma^2 G_t^2$$

Suppose that the error variance is related to another variable G_t

$$\frac{y_t}{G_t} = \beta_1 \frac{1}{G_t} + \beta_2 \frac{x_{2t}}{G_t} + \beta_3 \frac{x_{3t}}{G_t} + v_t$$

Where $v_t = \frac{u_t}{G_t}$ is the error term

Therefore

$$\text{var}(v_t) = \left(\frac{u_t}{G_t} \right) = \frac{\text{var}(u_t)}{z_t^2} = \frac{\sigma^2 G_t^2}{z_t^2} = \sigma^2$$

The practical approach is to accept the usual estimates, but to compute robust standard errors correcting for the possible presence of heteroskedasticity and/or individual autocorrelation. The advantage of using robust standard error is that it controls for both heteroscedasticity and serial correlation which can pose problems in panel data (Lei, 2006). Therefore, all models are estimated with robust standard error to take into account of heteroscedasticity and serial correlation. The latter approach is the one adopted in the subsequent studies. To test for heteroscedasticity, the Breusch-Pagan/Godfrey test was used.

The presence of serial correlation indicates that the variables in the model violate the assumptions of the regression (Anderson et al., 2007). To cater for serial correlation, the Woodridge test for autocorrelation is employed. The presence of serial correlation indicates that the variables in the model violate the assumptions of the regression

(Anderson et al., 2007). Since the data involves both cross section and time-series, it raises the suspicion of the existence of serial correlation.

To more rigorously test the interaction hypothesis, the study performs further analyses on the “goodness of fit” of each of the models using the akaike test criteria. Here the akaike criterion (AIC) is a decision criterion is to strive for the lowest (arithmetic) value. The total effect of each of the model will be estimated by taking the first derivative of the each of the regression functions. The purpose of estimating these tests is to determine which of the models best explains the relationship between working capital management and profitability. To enhance the robustness of the results, the study performs further analysis on the relationship between working capital management and profitability. This test allows us to justify the results obtained by Hill et al. (2010) that investment in working capital depends on internal financing capacity of firms. Following the work of Baños-Caballero et al. (2013), the study divides the sample into two, based on the median of cash flow. Therefore firms with a cash flow above the sample median are assumed to be less likely to lack cash flow, while firms with a cash flow below the sample median are assumed to suffer from a lack of cash flow (Baños-Caballero et al. 2013). The akaike criterion (AIC) is used as a decision criterion for the best fit models.

6.4 CONCLUSION

This chapter provides a discussion on the research methodology adopted for the study. It provided detailed discussion on the various methodologies adopted for the study, description and justification of the choice of data and methodology. The study’s sample consisted of 225 listed companies on the main market of London stock exchange for the period 2001-2011. The choice of the period was guided by UK Late Payment of Commercial Debts (Interest) Act 1998 which was amended in line with the EU Late 2002

Payment directive and now the new EU late payment directive in 2011. Two main types of financial data were employed: financial and corporate governance variables. The financial data variables were gathered mainly from Thompson one Analytics and Analyse Major Databases from European Sources (AMEDEUS) while the corporate governance variables data was obtained from Boardex. The remainder of this chapter was presented as follows: Section 6.2 presented a description of the data and procedure for sample selection. In this section, the various variables employed in establishing the hypotheses used on the effect of WCM and its components on profitability of firms were discussed. Section 6.3 presented a discussion on the tool for data analysis whilst section 6.4 concluded the chapter.

CHAPTER SEVEN
RESULTS ON THE RELATIONSHIP BETWEEN WORKING CAPITAL
MANAGEMENT AND PROFITABILITY

7.1 INTRODUCTION

This chapter presents empirical results on the relationship between working capital management and profitability as examined by most previous studies. Its objective is to isolate the impact of working capital management and its components on profitability in order to determine if the impact may be caused by multiple contingent factors as postulated by the contingency framework. It incorporates other control variables found relevant by previous studies to influence the relationship between working capital management on profitability. Overall, the chapter presents results of sixteen hypotheses formulated in chapter seven using the methodological framework presented in chapter eight. The rest of the chapter is structured as follows. Section 7.2 provides descriptive statistics of the study. Section 7.3 presents the correlation analysis. Section 7.4 discusses the multiple regression results whilst a final discussion and conclusion of the chapter is summary in section 7.5.

7.2 DESCRIPTIVE STATISTICS

Descriptive statistics of the independent and dependent variables are presented in Table 7. This section is presented in four sub-sections. The first sub-section presents descriptive statistics of the dependent variable of the study, whilst the second sub-section presents analysis of the main explanatory variables. Finally, the last two sub-section presents evidence of both the corporate governance and company characteristics variables.

7.2.1 Dependent Variable

The study adopts return on assets (ROA) as the main dependent variable. From the Table 7, firms make an annual average return on assets of 7 per cent with a minimum and maximum yield of -95 per cent and 83 per cent respectively over the studied period.

Table 7:

Summary Statistics for all continuous variable

This table reports descriptive statistics for all continuous variables adopted in estimating the relationship between working capital and profitability on a sample of 225 listed companies on the London Stock Exchange in the period 2001-2011. It is presented in four sub-sections. The first sub-section presents descriptive statistics of the dependent variable of the study which is measured using return on assets (ROA), whilst the second sub-section presents analysis of the main explanatory variables which includes: cash conversion cycle (CCC), accounts payable in days (AP), accounts receivable in days (AR), inventory held in days (INV). Finally, the last two sub-section presents evidence of both the corporate governance (Chief Executive Officer (CEO) tenure (TENURE), and board size(BODSIZE),) and company characteristics variables company size, (FIRMSIZE), asset tangibility (ATAN), financial leverage (LEV), liquidity ratio (CR), sales growth (SGRTH), industry cash flow (CFL).

Variable	Observation	Mean	Standard Deviation	Min	Max	Skewness	Kurtosis
ROA	2475	0.0698612	0.1215402	-0.9509001	0.828169	-0.788433	12.45852
CCC	2475	65.90347	192.6159	-916.1029	975.7919	-0.4938095	8.48334
AR	2475	61.31013	40.51579	0	408	2.126579	13.46358
AP	2475	96.418	151.9659	-814.9766	968.2471	2.958137	13.77756
INV	2475	102.9528	121.0654	0	982	3.136338	15.39209
TENURE	2475	5.410747	4.364663	0	29.2	1.393101	5.824938
BODSIZE	2475	7.882828	4.367816	0	48	1.418398	11.72934
FIRMSIZE	2475	5.59648	1.32409	0	8.432691	-1.054799	7.257839
ATAN	2475	7.531465	59.65537	-1.841099	941.8556	10.61962	127.7575
LEV	2475	0.5948916	7.00285	0	251.1077	24.90177	765.8831
CR	2475	1.589277	2.331814	0	78	16.51105	483.3076
CFL	2475	9.679103	13.81347	-98.6	89.56	-0.0569783	15.40279
SGRTH	2475	0.4503902	8.601027	-16.53582	287.8689	27.59641	826.2788

***Significant at 0.01 level; **Significant at 0.05 level; *Significant at 0.10 level; t-statistics are in parentheses.

This means that majority of listed companies on the LSE reported a profit while some made significant losses for the entire period. Tauringana and Afrifa (2013) on the other hand reported an annual average return on assets of minus 1.43 per cent for AIM listed SMEs on the London Stock Exchange. The disparity in the two findings suggests that larger firms on the London Stock Exchange are much profitable than small firms.

7.2.1.1 Working Capital Management Variable

Table 7 also presents evidence of descriptive statistics of WCM (CCC) and its components (AR, AP and INV) as adopted by previous studies (Deloof, 2003; Garcia-Teruel and Martinez-Solano, 2007, Tauringana and Afrifa, 2013). Evidence from the study reveals an average CCC of 66 days with a maximum of 976 days and minimum of 916 days overdue payment period. This means that companies take on average 68 days more to turnover their inventory and collect payment from their customers as compared to making payments to trade creditors. Mathuva (2010) reported a similar average cash conversion cycle duration of 69.35 days when he investigated the influence of WCM components on corporate profitability of Kenyan listed firms. A high standard deviation of 913 days specifies that there is wider variation of CCC period between the companies. The study also found that most of the listed companies take an average of 61 days for UK companies to collect their credit sales from their customers with a maximum of 408 days and minimum of 0 days payment period. The minimum accounts receivable period of 0 day means that some companies do not have debtors. Similar days of 61.21 were recorded by Falope and Ajilore (2009). However, there is less variation of accounts receivable period between the companies which falls within the same range (47 per cent) of similar studies of Falope and Ajilore (2009). The table also reveals that listed companies take an average of 96 days, a maximum of 968 days and a minimum overdue payment day of 814 days to pay their trade creditors. This evidence suggests that some companies delay in paying their creditors. The

high standard deviation of 152 days is an indication of the wider variation in the accounts payable period of sampled companies. The evidence confirms Wilson (2008) findings of late payment problem among UK firms with large firms being the worse culprits due to their long bureaucratic procedures for processing invoices. According to Wilson (2008), larger firms take an average of over 74 days to settle their invoices while small and medium firms take over 58 days. In spite of this, larger firms are still granted credit by smaller firms because they are perceived as less risky clients than smaller buyers (Wilson, 2008).

In terms of inventory management, the study found that the average inventory holding period is 102.95 days with a minimum and maximum holding period of 0 days and 982 days respectively. A minimum inventory turnover of 0 demonstrates that some companies of the study had no inventory and hence had no inventory hold period. It is also evident from the study that sampled companies have a high variation of inventory turnover of 121 days.

7.2.2 Control Variables

7.2.2.1 Corporate Governance

Two corporate governance variables have also been presented in Table 7. Evidence from the table reveals that the average CEO tenure of office among the sample companies is 5 years with a maximum of 29 years and a minimum of less than a year. The study found a standard deviation of 4.36 per cent which is an indication of less variation CEO tenure of office among sample companies. On the other hand, the study found the average board size of sample companies to be 8 members with a maximum of 48 members.

7.2.2.1 Company Characteristics

The average size of companies in terms of turnover is £56m. Companies' size of sampled firms ranges with a minimum size of £0 to a maximum of £84m suggesting that some companies were larger companies as they have their turnover above the £11.4m threshold used by the UK companies Act of 2006 section 382 to classify a small company. In terms of asset tangibility, it was found that on average, companies have an asset tangibility ratio of 7.8. This suggest that majority of the companies have more assets in the form of fixed assets. This evidence reveals that larger firms tend to have more fixed assets than current assets as compared to smaller firms. Evidence from Padachi (2006) reveal that that SMEs tend to have more current assets than fixed assets. The study also found that most listed firms have average financial leverage of 0.41 per cent, a minimum of 0 per cent and a maximum leverage of 86 per cent. The average financial leverage of 41 per cent explains that the majority of the companies are using equity capital to finance their businesses. Such evidence is justified since these sampled firms are listed companies which have access to unlimited equity capital. The study also found average liquidity ratio ranges from maximum of 78 to a minimum of 0 with an average of 1.59. Liquidity ratio of 1.6 signifies that most of the listed companies are highly liquid as found by Deloof (2003) and Padachi (2006). The study also found that most listed firms have a cash flow of £9.7million with an average sales growth of about 45 per cent.

7.3 CORRELATION ANALYSIS

Table 8 contains the correlation matrix for all the continuous variables for possible presence of multicollinearity. The correlation result in Table 8 indicates that none of the variables had their coefficients greater than the threshold of 0.87 or 0.97 as suggested by Field (2005). Hence their inclusion in the each of the models creates no problem of multicollinearity. The results show a significantly negative correlation between the return on assets and the number of day's accounts receivable (AR). This implies that firms'

profitability is negatively affected by firms' accounts receivable policy (AR). The study also found a significantly positive correlation between ROA and both AP suggesting that firms could also increase their profitability by having a longer payable period. In the same vein, a negative and insignificant correlation was found between Inventory and ROA. However, the correlation results also indicate a significantly negative relationship between ROA and cash conversion cycle which signifies that reduction in working capital management (CCC) leads to higher ROA. The results however suggests that, firms are able to quickly convert their inventory into sales, recover receipts from credit sales whiles slowing down their cash disbursements.

Table 8:***Correlations Coefficient***

This table reports the correlation coefficients for all continuous variables adopted in estimating the relationship between working capital and profitability. Variables are defined as follows: return on assets (ROA), accounts receivables (AR), accounts payables (AP), inventory days held (INV), firm size (FIRMSIZE), company tenure (TENURE), board size (BODSIZE), asset tangibility (ATAN), financial leverage (LEV), liquidity ratio (CR), sales growth (SGRWTH), industry classification (INDUST), cash conversion cycle (CCC), cash flow (CFL).

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1 ROA	1.00												
2 CCC	-0.08***	1.00											
3 AR	-0.15***	0.19***	1.00										
4 AP	0.06***	-0.73***	0.05**	1.00									
5 INV	-0.02	0.57***	0.05**	0.06***	1.00								
6 FIRMSIZE	0.17***	-0.07***	0.07***	0.07***	-0.02	1.00							
7 CFL	0.40***	-0.08***	-0.09***	0.04**	-0.05***	0.17***	1.00						
8 LEV	-0.03	-0.01	-0.07***	-0.03	-0.02	-0.01	-0.05**	1.00					
9 CR	-0.10***	0.20***	0.07***	-0.05**	0.26***	-0.07***	0.01	-0.03	1.00				
10 BODSIZE	0.06***	0.06**	-0.06**	-0.06**	-0.00	0.21***	0.06**	0.02	-0.01	1.00			
11 TENURE	0.05***	0.09***	0.03	-0.05**	0.07***	-0.06**	0.02	0.02	0.04**	0.04**	1.00		
12 ATAN	-0.03	0.02	0.05**	-0.04	-0.02	-0.11**	-0.03	-0.01	-0.01	0.05**	-0.04**	1.00	
13 SGRTH	0.04	-0.01	-0.03	-0.01	-0.02	-0.02	0.01	-0.00	-0.01	0.01	0.01	-0.00	1.00

Significance levels are designated at 1% (***), 5% (**) and 10% (*) for tests of whether the correlation coefficient is equal to zero

This however results in an increase in profitability for these firms as suggested by Nobanee (2009). Among the independent variables, there are significant correlations among all the four principal components of working capital management. There is a high and significant correlation between CCC and the other two measures of WCM including INV (0.57) and AP (-0.73) but not with AR. Because the combination of the other three components of WCM including inventory holding period, accounts receivable period and accounts payable period results in the calculation of the cash conversion cycle, each WCM variable is therefore run separately with the control variables to avoid collinearity issues (see, Padachi, 2006; Garcia-Teruel and Martinez-Solano, 2007; Mathuva, 2010).

Furthermore, evidence from table 8 found a significant relationship between ROA and the two corporate governance variables. The results indicate a significant positive correlation between these two variables (CEO tenure and board size). This result supports Dehaene et al. (2001) and Coles et al. (2008) evidence on the importance of having a larger board size for companies. It is suggested companies with larger boards are able to improve profitability due to the large amount of valuable advice coming from a large pool of expertise on the board (Dalton and Dalton, 2005). However, the relationship of ROA with CEO tenure is significantly positive which point to the fact that longer tenure of CEOs result in maximisation of profitability. The study also found a significant positive relationship between CEO tenure and two components of working capital (cash conversion cycle and inventory holding period). The study on the other hand found an insignificant positive relationship between CEO tenure and Accounts payable period. It also found a significantly negative relationship between CEO tenure and accounts receivables.

In terms of the WCM components, accounts receivable period and cash conversion cycle are positive and significantly correlated with board size whilst accounts payable period inventory holding period are negatively correlated with board size.

The study also found some significant correlation between ROA and company characteristics. ROA is positively correlated with between firm size and cash flow but not statistically significantly correlated with the rest of the company characteristics variables. This means that the bigger the company the more profitable it becomes. This is because larger companies usually enjoy economics of scale, a higher negotiation power over their clients and suppliers (Serrasqueiro et al., 2008; Singh and Whittington, 1975), which improves their profitability. Also firms with positive cash flow tend to be more profitable than those with cash flow problems; this is because companies with available cash flow may take advantage of the cash to make bulk purchases which may reduce the procurement cost of production. There is a negatively significant correlation of ROA with liquidity ratio and working capital requirement. This signifies that higher proportion of liquidity and higher working capital requirement results in lower profitability. Although the bivariate correlation results show the relation between working capital management and profitability, it does not take into account each variable's correlation with all other explanatory variables. As a result the main analysis of this study will be derived from appropriate multivariate models, estimated using panel data framework. The model has the advantage of more degrees of freedom, less multicollinearity among the explanatory variables, improved efficiency of econometric estimates (Begona, 1997) and above all controls for the unobservable heterogeneity among the sample since they can be observed through time.

7.4 MULTIPLE REGRESSION RESULTS

The study starts by replicating the results of previous studies (Deloof, 2003; Lazaridis and Tryfonidis, 2006; Mathuva, 2010; Tauringana and Afrifa, 2013) in Table 9. The rationale is to explore the relationship between WCM, its components and profitability without interactive effect as demonstrated by previous studies. The results from the Hausman's test

indicates the use of random effect (RE) and therefore the main balanced panel data results are obtained by RE using STATA application version (11.2).

7.4.1 Working Capital Management Variables and Profitability

7.4.1.1 Working capital Management

The results of Model 1 present evidence of the relationship between WCM (CCC) and profitability (ROA). Hypothesis H₁ predicts that all other thing be held constant, there is a significantly negative relationship between cash conversion cycle and profitability. The study found a significantly negative relationship between cash conversion cycle (b= -0.147, p<0.01) and ROA. Therefore H₁ is supported. The results are consistent with Lazaridis and Tryfonidis (2006), Garcia-Teruel and Martinez-Solano (2007), Dong and Su (2010), but contradicts (Deloof, 2003; Ganesan, 2007; Samiloglu and Demirgunes, 2008).

7.4.1.1 Accounts Receivable Period

Therefore H₂ is supported by the data and consistent with Deloof (2003), Lazaridis and Tryfonidis (2006), Padachi (2006), Garcia-Teruel and Martinez-Solano (2007). It supports the argument that firms with shorter accounts receivable (AR) period are able to improve their profitability since shorter accounts receivable period frees up cash quickly for companies. This cash could be used to make payment of bills on time in order to enjoy early payment discounts without the need for the firm to seek external source of funding which often tend to be very expensive customers (Martinez-Sola et al., 2013). This finding contradicts studies of Ramachandran and Janakiraman (2009), Raheman et al. (2010).

7.4.1.1 Accounts Payable Period

Model 3 of Table 9 contains results of the relationship between accounts payables (AP) and profitability. Results from the table confirms hypothesis H₃ that all other things being equal, there is a significantly positive relationship between accounts payables (b= 0.077,

Table 9

Regression Results Of The Relation Between Working Capital Management And Profitability

This table presents results of the following panel data regression on the relationship between working capital, its contingencies and profitability: $PROFITABILITY_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it} + V_{it} + \varepsilon_{it}$. Where: $PROFITABILITY_{it}$ is the dependent variable which is measured using return on assets (ROA); X variables include cash conversion cycle (CCC), accounts payable in days (AP), accounts receivable in days (AR), inventory held in days (INV). Z represents control variables that may influence companies' profitability. These variables are divided into two: corporate governance variables and company characteristics variables. Chief Executive Officer (CEO) tenure (TENURE), board size (BODSIZE), while company specific characteristics variables include: company size (FIRMSIZE), financial leverage (LEV), liquidity ratio (CR), sales growth (SGRWTH), industry classification (INDUST) are include but not reported, cash flow (CFL). V_{it} is the unobserved company effects (fixed effects) and ε_{it} the idiosyncratic shocks β_1 and β_2 are vectors of the parameters to be estimated. The subscript i denotes the n th company ($i = 1 \dots 225$), and the subscript t denotes the t^{th} year ($t=1, \dots 11$). Regressions are estimated with individual random effects.

	RETURN ON ASSETS (ROA)		RETURN ON ASSETS (ROA)	
	Model 1	Model 2	Model 3	Model 4
AR	-0.278*** (-6.71)			
AP		0.077*** (4.15)		
INV			-0.021 (-0.68)	
CCC				-0.147*** (-4.20)
TENURE	0.026*** (3.90)	0.026*** (4.25)	0.026*** (4.18)	0.026*** (4.25)
CFL	0.019*** (4.45)	0.017*** (5.07)	0.018*** (5.27)	0.017*** (5.07)
FIRMSIZE	-0.271*** (-7.55)	-0.209*** (-6.22)	-0.233*** (-6.37)	-0.199*** (-5.91)
LEV	0.009*** (3.28)	0.001 (0.34)	0.004 (1.08)	0.004 (1.03)
CR	-0.041*** (-2.01)	-0.065*** (-5.52)	-0.058*** (-4.45)	-0.063*** (-4.92)
ATAN	-0.001*** (-8.28)	-0.001*** (-6.71)	-0.001*** (-5.98)	-0.001*** (-7.30)
BODSIZE	0.028*** (3.17)	0.012 (1.59)	0.013 (1.71)	0.012 (1.63)
SGRWTH	0.007 (1.54)	0.003 (0.73)	0.003 (0.96)	0.003 (0.87)
Individual (RE)	Yes	Yes	Yes	Yes
Industry dummies	Included	Included	Included	Included
Observations	2475	2475	2475	2475
R-SQ	12	11	10	9
Akaike	5637	7158	7095	7221

Standard errors clustered at firm level in parentheses. ***1%, **5%, and *10% significance; t-statistics are in parentheses.

$p < 0.01$) and profitability. Therefore hypothesis H_3 is supported by the data and consistent with Mathuva (2010), Falope and

Ajilore (2009); Vishnani and Shah (2007); Raheman et al. (2010); Sen and Oruc (2009); Dong and Su (2010) but contradicts studies of Deloof (2003), Lazaridis and Tryfonidis (2006), Ganesan (2007), Garcia-Teruel and Martinez-Solano (2007), Raheman and Nasr (2007), Karaduman et al. (2011), Alipour (2011), Hayajneh and Yassine (2011) and Karaduman et al. (2011).

7.4.1.1 Inventory Holding Period

Evidence results of Model 4 from Table 9 reveals a negative but not significant relationship between inventory day holding (INV) period ($b = -0.021$, $p > 0.1$) and ROA. This result is consistent with Padachi (2006) but contradicts (Deloof, 2003; Ganesan, 2007; Garcia-Teruel and Martinez-Solano, 2007; Raheman and Nasr, 2007; Samiloglu and Demirgunes, 2008; Falope and Ajilore, 2009; Sen and Oruc, 2009; Dong and Su, 2010; Gill et al., 2010; Raheman et al., 2010; Alipour, 2011; Hayajneh and Yassine, 2011; Karaduman et al., 2011; Stephen and Elvis, 2011). Hypothesis H_4 is therefore is not supported by the data.

7.4.1.2 Control Variables

I. Corporate Governance

With respect of the corporate governance control variables, the study found a significantly positive relationship between CEO tenure and ROA in all the four models. This supports hypothesis H_9 of chapter six that all things being equal, there is a positive association between CEO tenure and profitability as found by Agrawal and Knoeber (1996). This suggests that longer tenured CEO leads companies to higher profitability. This result

contradicts studies of (Lorsch and MacIver, 1989; Coles et al., 2001). However, the study also found a significantly positive relationship between company board size ($b= 0.028$, $p<0.01$) and ROA in model 2. This finding supports H_{10} of chapter six that all things being equal, there is a significantly negative relationship between company board size and profitability. This confirms the findings of Uadiale (2010); Mangena et al. (2012); Kajola et al. (2008) but contradicts previous studies of (e.g., Lipton and Lorsch, 1992; Yermack, 1996; Eisenberg et al., 1998). However, the study did not find any significant relationship between company board size and ROA in the rest of the models.

II. Company Characteristics

In order to determine the relationship between working capital management and profitability, the study also introduces the effect of company characteristics as control variables. These variables have been introduced and found significant in estimating the relationship. They include company size, financial leverage, assets tangibility liquidity ratio and cash flow and sales growth. The study found a significantly negative relationship between company size and profitability in all the models (model 1, $b = -0.199$ $p< 0.01$; model 2, $b = -0.271$ $p< 0.01$; model 3, $b = -0.209$ $p< 0.01$ and model 4, $b = -0.233$ $p< 0.01$). This finding confirms hypothesis H_{11} of chapter six that all thing being equal, there is a significantly negative relationship between company size and profitability. The evidence supports previous studies (Hansen and Wernerfelt (1989) that larger companies tend to be more profitable than smaller companies. This association can be pinned on the fact that larger companies benefit from economies of scale and therefore improves ROA (Singh and Whittington, 1975; Serrasqueiro and Nunes, 2008).

In terms of assets tangibility, the study found a significantly negative relationship between asset tangibility and ROA in all the models (model 1, $b = -0.001$ $p< 0.01$; model 2, $b = -$

0.001 $p < 0.01$; model 3, $b = -0.001$ $p < 0.01$ and model 4, $b = -0.001$ $p < 0.01$), which shows that higher proportion of tangible fixed assets leads to reduced ROA. This finding confirms hypothesis H_{12} of chapter six that all things being equal, there is a significantly negative relationship between company size and profitability. These findings are consistent with the result of a study by Raheman and Nasr (2007) that also found a negative and significant association between asset tangibility and ROA. However, the study only found a significantly positive relationship between financial leverage ($b = 0.009$ $p < 0.01$) and ROA in model 2. On the basis of this evidence, the study suggests that firms with higher leverage tend to have a higher profitability. The evidence supports the study's hypothesis H_{13} and the findings of Bothwell et al. (1984) and Tirta (2006). On the other hand, the study did not find any significant relationship between financial leverage and ROA in the rest of the models in Table 9. The study also found a significantly negative relationship between liquidity ratio and ROA in all the models (model 1, $b = -0.063$ $p < 0.01$; model 2, $b = -0.041$ $p < 0.01$; model 3, $b = -0.065$ $p < 0.01$ and model 4, $b = -0.058$ $p < 0.01$), which supports hypothesis H_{14} of chapter six, that there is a significantly negative relationship between liquidity ratio and profitability. This supports the argument by Hvide and Moen (2007); Ng and Baek (2007) that a high liquidity may hinder a company's profitability. It also confirms empirical evidence of Tauringana and Afrifa (2013). Finally, the results of the control variables in Table 9 also show that company's cash flow is significant and positively related to ROA in all the models (model 1, $b = 0.017$ $p < 0.01$; model 2, $b = 0.019$ $p < 0.01$; model 3, $b = 0.017$ $p < 0.01$ and model 4, $b = 0.018$ $p < 0.01$), consistent with H_{15} of chapter and previous studies of Autukaite and Molay (2011). Therefore the study suggests that the availability of cash flow may lead to higher profitability as firms are also able to reduce their transactional cost of paying bills according to Ferris (1981).

SGRTH is not significant in all the models. Therefore, H₁₆ is not supported by the data of the study.

7.5 DISCUSSION

The evidence presented in this chapter suggests a significantly negative relationship between WCM (CCC) and profitability as found by most studies (Garcia-Teruel and Martinez-Solano, 2007; Sen and Oruc, 2009; Dong and Su, 2010). Evidence from the study supports the traditional belief that reducing working capital investment would positively affect the profitability of firm (aggressive policy) by reducing proportion of current assets in total assets (Garcia-Teruel and Martinez-Solano, 2007). It confirms the argument made by Nobanee (2009) that profitable firms are able to quickly recover their receipts from credit sales quickly while quick in their cash disbursements in order to earn high discounts for early payment. It has also been argued that firms with a shorter cash conversion cycle are able to maximise profitability due to their ability to internally generate funds, which could reduce their reliance on external finance, which often tends to be expensive (Autukaite and Molay, 2011; Banos-Caballero et al., 2013).

On the other hand, the study found a significantly negative relationship between accounts receivable (AR) and profitability. This evidence is consistent with studies of Deloof (2003); Lazaridis and Tryfonidis (2006); Padachi (2006); Garcia-Teruel and Martinez-Solano (2007) that a lower accounts receivable period improves companies' profitability because it frees up cash which could be used to make payment of bills on time in order to enjoy early payment discounts and also helps the company to avoid the costly need of borrowing to fund investment in customers.

The study also found a significantly positive relation between accounts payable (AP) days and profitability. This suggests that firms could improve their profitability through early

payments as they are able to earn high discounts for early payment. Ng et al. (1999) argued that firms that wait longer before settling their supplies often tend to lose discount for early payment. This sometimes affects their profitability as the amount of cash discount can sometimes be substantial leading to some firms facing a high opportunity cost due to the loss of discount and the high inherent cost involved in credit period. Delaying payments also involves bearing the cost of charge interest for late payment which may have negative effects on profitability and liquidity because of debt defaults (Cheng and Pike, 2003). Also, it may lead the buyer to incur some additional administrative costs such as insurance cost and cost of warehousing (Mian and Smith, 1992), because of costly credit management activity (Martinez-Sola et al., 2013) which negatively affects the firms' profitability. However, the study did not find any significant relation between inventory holding period (INV) and profitability. On the basis of the above evidence the study concludes that WCM and two its components (AR and AP) have significantly relationship with profitability as determine by most previous studies.

Under the control variables, the study found a significant relationship between corporate governance factors (Chief Executive Officer (CEO) tenure and board size) and profitability, evidence from the study found a significantly positive relation between CEO tenure and profitability which supports Kyereboah-Coleman (2007b) that since CEOs continue to accumulate task knowledge and also sharpen their leadership skills with time, longer tenured CEOs are motivated to improve profitability. The study also found a significantly negative relationship between company board size and profitability. This finding confirms the findings of Uadiale (2010), Mangena et al. (2013) and Kajola et al. (2008) that companies with larger board size tend to be more profitable.

Furthermore, the results also suggests that a significantly negative relationship between company size and profitability. The evidence supports previous studies Yang and Chen

(2009) that larger companies tend to be more profitable than smaller companies. This finding supports the argument that larger companies can improve profitability because of their reduced operating costs and costs of innovation (Serrasqueiro and Nunes, 2008; Hardwick, 1997). In terms of assets tangibility, the study found a significantly negative relationship between asset tangibility and ROA. These findings are consistent with the result of a study by Raheman and Nasr (2007). However, the study only found a significantly positive relationship between financial leverage and profitability. On the basis of this evidence, the study suggests that firms with higher leverage tend to have a higher profitability. The study also found a significantly negative relationship between liquidity ratio and ROA which supports the argument of Hvide and Moen (2007) that a high liquidity may hinder a company's profitability. Finally, the results of the study also show that company's cash flow is significant and positively related to ROA. Therefore the study suggest that the availability of cash flow may lead to higher profitability as firms are also able to reduce their transactional cost of paying bills according to Ferris (1981).

Based on these contrasting effects of WCM and its components on firm profitability; and the impact of corporate governance and firms characteristics on profitability, it can be argued that the relationship between WCM and firm profitability may not be linear as previously suggested (see, Jose et al., 1996; Shin and Soenen, 1998; Wang, 2002; Garcia-Teruel and Martinez-Solano, 2007). Its impact might be caused by multiple factors within and outside the firm.

7.6 SUMMARY AND CONCLUSION

This chapter presented empirical results on the relationship between working capital management and profitability as examined by most previous studies. Its objective was to isolate the impact of working capital management and its components on profitability in

order to determine if the impact may be caused by multiple contingent factors as postulated by the contingency framework. It incorporates other control variables found relevant by previous studies to influence the relationship between WCM and its components (AR, AP and INV) on profitability. The rest of the chapter was structured as follows. Section 7.2 provided descriptive statistics of the study. Section 7.3 presented the correlation analysis. Section 7.4 discussed the multiple regression results whilst a final discussion was presented in 7.5. A final summary and conclusion of the chapter was summary in section 7.6.

CHAPTER EIGHT

THE RELATIONSHIP BETWEEN WORKING CAPITAL MANAGEMENT, ITS COMPONENTS AND PROFITABILITY: THE CONTINGENCY THEORY APPROACH

8.1 INTRODUCTION

This chapter presents empirical results of the study on the relationship between working capital management and profitability using the contingency theory framework. Its objective is to investigate whether the relationship between working capital management, its components (AR, AP and INV) and profitability is constrained by the interaction of contingent factors (environmental (E), resource (R) and management (M)) factors of the firm as postulated by the contingency framework in chapter five. The rest of the chapter is structured as follows. Section 8.2 presents empirical analysis on the relationship between working capital, contingency variables and profitability. Section 8.3 provides a discussion on the findings on the relationship between working capital, contingency variables and profitability. Section 8.4 presents the robust test whilst a final conclusion on the chapter is presented in section 8.5.

8.2 WORKING CAPITAL MANAGEMENT, CONTINGENCY VARIABLES AND PROFITABILITY

Evidence on the relationship between working capital, its contingencies and profitability is presented in Table 10. The study interacted each component of working capital with environmental (E), resource (R) and management (M) variables as postulated by the contingency theory. Their coefficients should not significantly differ from model 1, 2, 3 and 4. The sum of the coefficient of WCM (CCC) and its components (AR, AP and INV)

and their interactive term (CCC*ERM, AR*ERM, AP*ERM and INV*ERM) reflects the total effect of WCM and its components after interaction (see Mangena et al., 2012; and Darnel, 2009).

Table 10

Working Capital Management, Its Contingencies and Profitability

This table presents results of the following panel data regression on the relationship between working capital, its contingencies and profitability: $PROFITABILITY_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it} + \beta_3 XZ_{it} + V_{it} + \varepsilon_{it}$. Where: $PROFITABILITY_{it}$ is the dependent variable which is measured using return on assets (ROA); X variables include cash conversion cycle (CCC), accounts payable in days (AP), accounts receivable in days (AR), inventory held in days (INV). Z represents control variables that may influence companies' profitability. These variables are divided into two: corporate governance variables and company characteristics variables. Chief Executive Officer (CEO) tenure (TENURE), board size (BODSIZE), while company specific characteristics variables include: company size (FIRMSIZE), financial leverage (LEV), liquidity ratio (CR), sales growth (SGRWTH), industry classification (INDUST) are include but not reported, cash flow (CFL). XZ represents the interactive term (environmental, resource and management variables) with the main variables of working capital management. CERM, ARERM, APERM and INVERM denotes the interaction of environmental resource and management variables with cash conversion cycle accounts receivables accounts payables and inventory days held respectively. Environmental variables are proxy by industry classification, resource variable proxy by cash flow and management proxy by board size. V_{it} is the unobserved company effects (fixed effects) and ε_{it} the idiosyncratic shocks β_1 and β_2 are vectors of the parameters to be estimated. The subscript i denotes the n th company ($i = 1 \dots 225$), and the subscript t denotes the t^{th} year ($t=1, \dots, 11$). Regressions are estimated with individual random effects.

	RETURN ON ASSETS (ROA)		RETURN ON ASSETS (ROA)	
	Model 5	Model 6	Model 7	Model 8
CCC	-0.375*** (-7.55)			
AR		-0.524*** (-9.71)		
AP			0.051 (-1.54)	
INV				-0.242*** (-5.62)
CCC*ERM	0.643*** (7.33)			
AR*ERM		0.634*** (8.04)		
APD*ERM			0.460*** (7.05)	
INV*ERM				0.644*** (8.07)
TENURE	0.019*** (2.90)	0.016** (2.28)	0.020*** (3.10)	0.011 (1.62)
FIRMSIZE	-0.262*** (-7.36)	-0.332*** (-8.89)	-0.268*** (-7.55)	-0.230*** (-5.53)
LEV	0.013*** (3.16)	0.018*** (4.71)	0.009** (2.63)	0.012** (2.81)
CR	-0.054** (-3.40)	-0.039*** (-1.73)	-0.065*** (-5.27)	-0.024 (-0.84)
ATAN	-0.001*** (-6.65)	-0.001*** (-8.73)	-0.001*** (-5.88)	-0.001*** (-5.21)
SGRWTH	0.001 (0.42)	0.006 (1.28)	0.002 (0.42)	0.003 (0.55)
Constant	-2.869*** (-9.61)	-1.984*** (-5.82)	-1.781*** (-5.97)	-3.105*** (-10.87)
E	Included	Included	Included	Included
R	-0.022*** (-3.91)	-0.024*** (-3.51)	-0.022*** (-3.86)	-0.010 (-1.83)
M	-0.057*** (-4.49)	-0.041** (-3.06)	-0.055*** (-4.51)	-0.041*** (-3.22)
Individual (RE)	Yes	Yes	Yes	Yes
Observations	2475	2475	2475	2475
R-SQ	16	19	18	12
Akaike Test	6396	4968	6303	5796
Total Effect	0.402	0.268	0.11	0.409

Standard errors clustered at firm level in parentheses. ***1%, **5%, and *10% significance; t-statistics are in parentheses.

The study expects both the coefficients of the interaction terms and the sum of the coefficients of the individual variables and their interaction terms to be positive and significant (see also Coles et al., 2008).

8.2.1 Working Capital Management Variables

Table 10 shows regression results of the relationship between working capital management, its contingencies and profitability. Results of model 5 and model 6 confirm similar results of model 1 and model 2 of table 9. The study found a significantly negative relationship between CCC ($b=-0.375$, $p<0.01$) and ROA; accounts receivable (AR) ($b=-0.524$, $p<0.01$) and ROA. These results are consistent with studies of with Garcia-Teruel and Martinez-Solano (2007); Falope and Ajilore (2009). On the other hand, the study rather found an insignificant relationship between accounts payables (AP) ($b=-0.051$, $p>0.1$) and ROA. It also found a significantly negative relationship between inventory day holding (INV) period and ROA. This finding was found to be insignificant in model 4 of Table 9.

8.2.1.1 Cash Conversion Cycle, Contingent Variables and Profitability

The study also documented that, the coefficient of the interactive term (CCC*ERM) is significant and positive at the 1% level or better. This finding is consistent with hypothesis H₅. It also found that the coefficient of the interaction term ($b=0.643$) and the total effect are positive and significant ($b = 0.268$, $p<0.01$) as recommended by Coles, et al. (2008). Therefore the interaction of environmental, resources and management factors significantly moderates the relationship between cash conversion cycle and profitability.

8.2.1.2 Accounts Receivables, Contingent Variables and Profitability

Evidence results of Model 6 from Table 10 also reveals a significantly positive ($b = 0.634$, $p < 0.01$) relationship between accounts receivables, the interactive term (AR *ERM) and ROA. This result is consistent with hypothesis H₆, that all other things being equal the interaction of environmental, resources and management factors significantly moderates the relationship between account receivables and profitability. The models' coefficient of the interaction term ($b=0.643$) and the total effect are positive and significant ($b = 0.11$, $p < 0.01$) as predicted. On the basis of this evidence, the study suggests that environmental, resources and management factors significantly moderates the relationship between accounts receivable and profitability.

8.2.1.3 Accounts Payables, Contingency Variables and Profitability

In terms of accounts payables, the study documented significant relationship at 1% level of significance between interactive term (AP*ERM) and profitability. The findings also confirm hypothesis H₇ that the interaction of environmental, resources and management factors significantly moderates the relationship between accounts payables and profitability. The predicted coefficient of the interaction term ($b=0.460$) and the total effect are positive and significant ($b = 0.409$, $p < 0.01$) as recommended by Coles et al. (2008).

8.2.1.4 Inventory Holding Period, Contingent Variables and Profitability

The relationship between interactive term (INV*ERM) of INV and profitability is also significant at 1% level of significance and hence confirms our hypothesis H₈ that the interaction of environmental, resources and management factors significantly moderates the relationship between inventory holding period and profitability. The study also found a positive and significant the predicted coefficient of the interaction term ($b=0.644$) and the total effect are positive and significant ($b = 0.402$, $p < 0.01$). On the basis of this finding the

study suggests that the interaction of environmental, resources and management factors significantly moderates the relationship between inventory holding period and profitability.

8.2.2 Control Variables

For the control variables, the study found most of them to remain similar to those of Table 8.3 although some of them have their level of significance and signs change.

8.2.2.1 Corporate governance

The study found a significantly positive relationship between CEO tenure and ROA in all the models except model 7.

8.2.2.2 Company Characteristics

Compared to Table 9 of chapter 7, results of table 10 also found a significantly negative relationship between company size and profitability in all the models. Results of table 10 also confirm the results of table 9 and that of Raheman and Nasr (2007) that there is a significantly negative association between asset tangibility and ROA. Unlike table 9 which only found a significantly positive relationship between financial leverage and ROA in model 1, results on table 10 found a significantly positive relationship between financial leverage and profitability in all the models. The study also found a significantly negative relationship between liquidity ratio and ROA in all the models except model 8. Like results of table 9, results of Table 10 did not find any significantly relationship between sales growth and profitability in all the models.

8.3 DISCUSSION

The study adopts the contingency theory approach to determine the relationship between working capital management and profitability. This is evident in the fact there may be a non-linear relationship between WCM and firm profitability due to the contrasting results

found in chapter six. Supported by the contingency theory which suggests that firms change their policies over time to adjust to the demands of their environment (Ambrosini et al., 2009; Rueda-Manzanares et al., 2008), their resource (Mol and Wijnberg, 2011) and management capabilities (Luo et al., 2013). Such an adjustment positively affects the firms' profitability. For instance, the degree of concentration in an industry, determines firm behavior and profitability. This is because higher concentration enables collusion between firms which leads to higher profits. According to Porter (1980), industrial characteristics such as industry concentration often results in barriers to entry for new firms and enables established firms to share industry profits among themselves. Therefore, firms need to adjust their policies to meet the demands of their environment within which they operate.

According Peteraf (1993), profitability differentials are produced by resource heterogeneity among competing firms. According to the resource based value of the firm, firm's unique resources accumulated over time are difficult and costly to emulate, as a result they contribute to superior profitability for firms (Demsetz, 1973). Grant (1991) identified financial resources such as cash flow as some of the key profitability related resources of the firm. Companies with available cash flow may take advantage of the cash to make bulk purchases which may reduce the procurement cost of production. The bulk purchase cost savings will also result in a decrease in the cost of sales of the product, which will reduce the overall price of the product leading to more profitability (Ng et al., 1999; Wilner 2000). The availability of cash flow may also increase the firm's profitability by reducing the transaction costs of raising funds (Peterson and Rajan, 1997). Moreover it has also been suggested that a firm's profitability depends on its conduct in matters such as its management policy, which also depends on the industrial structural characteristics, stakeholders and size (Spanos, Zaralis, and Liouks, 2004; Darnall, 2009).

Against this evidence, the study suggests that the impact of working capital management on firms' profitability needs to be understood in the context of firm-specific characteristics which are classified as environmental, resource and management factors by Luthans and Steward (1977). This will help identify the conditions under which firms are more effective as decision-making groups and which contingencies enhance or constrain firms' ability to enhance profitability through investment in working capital. As a result, the study interacted WCM and its components (AR, AP and INV) with the three key contingent variables (environment (E), resources(R) and management (M)) as postulated by contingency theory. The results suggest that all the four interactive variables are significantly positive associated with profitability. When compared to the results of the regression models without the three key contingent variables (environment, resources and management) as postulated by contingency theory in chapter six, the study found the inclusion of the interactive models in chapter seven better explains the relationship between WCM and profitability.

Evidence of the akaike test criteria suggests results of Table 10 to have lowest (arithmetic) value as compared to those of Table 9. Also, results of the total effect of each of the models were estimated by taking the first derivative of the each of the regression functions. Evidence from the total effect estimation and R-square confirm results of Table 10 to be the best fit models in explaining the relationship between working capital management and profitability. On the basis of this evidence the study concludes that working capital management has an indirect effect on profitability. Its impact is constrained and modified by organisational contingencies (environment, resources and management factors) of the firm. Therefore firms must align their working capital management policies with their environment and also arrange their resources internally to support such alignment as postulated in the contingency framework as any misalignment could significantly affect the

firms' profitability (Miles and Snow, 1978). As a result, it suggests the need for policy makers to match organisational resources with opportunities and threats in the general business environment (Andrews, 1971; Miller & Friesen, 1983) in order to improve their financial performance.

Importantly, any misalignment can significantly affect firm performance (Miles and Snow, 1978). As a result, it suggests the need for firms to introduce policies that are appropriate to their organisation's own resources to face the opportunities and threats that exist in the general business environment in order to improve their financial performance. For instance, in an environment with high uncertainty, firms with defender strategy such as an aggressive working capital where firms strive to reduce their investment in working capital (Deloof, 2003) could potentially face a misfit as a defender strategy works well in a more certain and stable environment (Miles and Snow, 1978). According to Bhattacharya (2008) firms could better achieve the objective of tighten their receivables during periods of stable demand and high sales (Long et al., 1993) and vice versa. On the other hand, Paul and Boden (2008) suggested that during recessions and other periods of financial distress firms witness a high demand for trade this is because failing and financially distressed firms tend to supply more credit as a means of trying to secure sales and take more credit from the supply-based as bank credit (Wilson, 2008). Therefore a firm aiming at boosting sales and profitability in such an environment could focus more investment in working capital (conservative policy).

Also the working capital policy pursued by the firm to enhance profitability could also depend on the management structure. Burton et al. (2000) suggested that a highly centralised company operating in a highly uncertain business environment is likely to face a potential misfit due to the level of information and decision overload on top management. Therefore Burton et al. (2000) argues that in order for companies not to

suffer from information and decision overload in a highly uncertain business environment, large companies need to have a highly decentralized management structure with a large composition. According to Lehn et al. (2004), larger boards have the advantage of enjoying a large amount of collective information which is also valuable for the monitoring function of the board. Such information may include the credit profiles of customers and their daily business operations. This helps to reduce the level of credit default among customers. Goodstein et al. (1994) suggested that the diversity of specialisation at the board could help companies to secure critical resources and also reduce environmental uncertainties. This helps reduce the level of information asymmetry between the buyer and the seller which often results in customers wanting more time to assess the quality of products before they buy (Deloof, 2003). Furthermore, it makes it easier to create committees within the company for the effective execution of duties and responsibilities (Bathula, 2008). These communities are able to sub-divide the duties and responsibilities on the lines of specialisation and expertise so as to ensure effectiveness and efficiency, which may maximise profitability for the firm.

Finally, firms' working capital policy needs to be supported by their unique resources in order to enhance their profitability. Evidence (e.g., Banos-Caballero et al., 2013) suggests that firms with higher financial resources such as cash flow increase their investment in working capital, which leads to higher profitability. Cash flow holdings constraints firms' investment in working capital (Banos-Caballero et al., 2013) in terms of its inventory or decision to extend more credit given there may be a limit in terms of how much inventory it can buy on credit and also how much trade credit it can ask from suppliers. Therefore firms with a positive cash flow holding are able to increase profitability through investment in working capital. In an event of cash flow unavailability firms strive to reduce

the investment in working capital (Banos-Caballero et al., 2013) in order to improve profitability.

8.4 ROBUSTNESS TESTS

To enhance the robustness of the results, further analysis on the relationship between working capital management and profitability was estimated. This allows the justification of the argument made by Hill et al. (2010) that investment in working capital depends on internal financing resources of the firms. Following Baños-Caballero et al. (2013) the study divided the sample into two groups, based on the median cash flow value. Thus, firms with a cash flow above the sample median are assumed to have high available cash flow, while those below the sample median are assumed to suffer from a lack of cash flow (Baños-Caballero et al., 2013). The rationale for the choice of firms' cash flow is driven from the argument of Moyen (2004) and Baños-Caballero et al. (2013) that; firms' investment in working capital management is sensitive to cash flow constraints. Firms with limited cash flow strive to reduce investment in working capital so as to avoid the need for expensive external finance while those with available internal cash flow increase investment in working capital in order to maximise profitability.

The Akaike criterion (AIC) was used as a decision criterion for the model of best fit. The study expects the variables to be more associated with financially constrained firms than non-financially constrained firms. The results are reported in table 11 and 12. Results from table 11 and 12 confirm that the variables are more associated with financially constrained firms since they have the lowest (arithmetic) AIC values.

In order to provide a further analysis on the relationship between working capital management and profitability, equation 1 in chapter five is extended into equation 3 by incorporating a dummy variable that distinguishes between firms more likely to face

financing constraints and those that are less likely according to the different classifications commented above. The study proposes the following specification:

$$PROFITABILITY_{it} = \beta_0 + (\beta_1 + \delta_1 DFC_{it})X_{it} + \beta_2 Z_{it} + \beta_3 XZ_{it} + V_{it} + \varepsilon_{it}$$

(3)

Where:

PROFITABILITY is the dependent variable which is measured using return on assets (ROA); **X** variables include cash conversion cycle (CCC), accounts payable in days (AP), accounts receivable in days (AR), inventory held in days (INV). DFC is a dummy variable that takes a value of 0 for firms more financially constrained, and 1 otherwise. **Z** represents control variables (firm size, cash flow, gearing, assets tangibility, tenure, sales growth and industry) that may influence companies' profitability. **XZ** represents the interactive term (environmental, resource and management variables) with the main variables of working capital management. V_{it} is the unobserved company effects (fixed effects) and ε_{it} the idiosyncratic shocks β_1 and β_2 are vectors of the parameters to be estimated. $\beta_1 + \delta_1$ Measures working capital investment of more constraint firms, β_1 measure the optimal working capital for less financially constraint firms. The subscript *i* denotes the *n*th company (*i* = 1,... 225), and the subscript *t* denotes the *t*th year (*t*=1,...11).

8.4.1 Working capital management and profitability using cash flow constraint as a criterion

In this section the study introduces the dummy variable for financial constraint into the model to determine if the investment in working capital by firms to enhance profitability is positively influenced by internal financing capacity of the firms. The importance of cash flow to firm profitability is evident from the amounts that are kept by companies. For

example, research by Guney et al. (2003) found that British firms on average hold 10.3% of their total assets in cash. The availability of cash flow will have an influence on the relationship between WCM and profitability of companies. Research has shown that availability of cash flow leads to higher investment in working capital (Hill et al. 2010; Baños-Caballero et al. 2013). Baños-Caballero et al. (2010) found that while the cost of financing negatively affects firms' working capital, better access to capital markets increases the investment in this. The availability of cash flow may lead to an increase in the investment of inventory, which will increase the overall CCC of a company. A company with available cash flow may take advantage and make bulk purchases, so reducing the procurement cost of production, and cost of sales of the product, which will in tend reduce the overall price of the product, enhancing profitability. The cost savings of bulk purchase may arise through quantity discounts from the supplier, reduced transportation costs (through making fewer trips to collect the supplies, or requiring fewer deliveries), and lower administrative costs (e.g. of placing and processing orders).

An increase in investment in inventory will help avoid the prospect of stockout (Christiano and Fitzgerald 1989; Wen 2003). Stockout has a catastrophic effect on a company's profitability through losing goodwill (Bhattacharya 2008), and driving both current and potential customers away to competitors. This will affect not only the current but also the future profitability of the company.

The availability of cash flow may also lead to increased investment in accounts receivable, leading to higher profitability. A company with available cash flow may be in a better position to offer generous credit to customers, giving them time to verify the quality of the product before paying (Smith 1987; Long et al. 1993; Danielson and Scott 2000). This is especially useful for new customers, who do not have experience of the product quality. Product guarantee facilitates future purchases (Bastos and Pindado 2007).

The availability of cash flow may also increase the investment in working capital by reducing the accounts payable period. A company with sufficient cash flow may take advantage of suppliers' cash discounts by paying immediately for supplies (Baños-Caballero et al. 2010); these discounts can be substantial (Ng et al. 1999). The decision to accept or request a credit period results in an inherent cost to a company, which diminishes profitability. Research by Ng et al. (1999) indicated that the combination of a 2% discount for payment within 10 days of receiving supplies and a net period of 30 days' credit implies an annualised interest rate of 43.9%. Therefore, the high cost inherently associated with the credit period will cause a reduction in profitability. This means that the availability of cash flow may help companies to improve their profitability by paying for supplies on time. Evidence of the analysis is presented in table 11. Evidence of the analysis is presented in table 11.

8.4.1.1 Financial Distress

The results of Table 11 present evidence of the relationship between financial distressed and profitability (ROA). The study found a significantly negative relationship between financial distress and ROA in all the models. Therefore the more financially distressed firms are, the less profitable they become. Less constraint firms tend to have adequate cash flow which is often used to increase their investment in working capital in order to improve profitability. Such evidence justifies the assertion that internally generated funds and access to external financing have an impact on firms' working capital decisions (Baños-Caballero et al. 2010; Autukaite and Molay 2011; Baños-Caballero et al. 2013). Comparing the akaike test criteria and the r-square for the best fitted model to explain the relationship, it is found that the interactive models (model 5 – 8) have the lowest akaike test criteria values and high r-square values than those models without the interactive effect (model 1 – 4). Therefore within the context of financial distress, the interaction of

environmental resource and management factors of the firms significantly estimate the relationship between working capital management and profitability. This result confirms the findings reported in table 9 and 10.

8.4.1.2 Cash Conversion Cycle

The study also found a significantly negative relationship between cash conversion cycle and profitability in both model 1 ($b = -0.191, p < 0.01$) and model 5 ($b = -0.363, p < 0.01$) of table 11. This means that the management of cash conversion cycle affect profitability of firms. Evidence from the study supports the argument that firms that have lower cash conversion cycle tend to have a higher profitability. The study therefore supports Nobanee (2009) argument that profitable firms are able to quickly to convert their inventory into sales and able to recover receipts from credit sales quickly whiles slowing down their cash disbursements. This finding is consistent with that of table 9. In terms of the interactive term, the study also found a significantly positive relationship between the interactive term (CCC*ERM) and profitability. This finding is consistent with hypothesis H₅ that the interaction of environmental, resources and management factors significantly moderates the relationship between cash conversion cycle and profitability. However, with lower akaike test values and high r-square values, the study finds the interactive term models (5, 6, 7 and 8) to better explain the relationship between cash conversion cycle and profitability which also consistent with results of Table 9.

Table 11:

Robustness results of the relationship between working capital management and profitability using cash flow constraint as a criteria

The table reports a further analysis on the relationship between working capital management and profitability using cash flow constraint as a criterion. The model is presented as follows: $PROFITABILITY_{it} = \beta_0 + (\beta_1 + \delta_1 DFC_{it})X_{it} + \beta_2 Z_{it} + \beta_3 XZ_{it} + V_{it} + \varepsilon_{it}$. PROFITABILITY is the dependent variable which is measured using return on assets (ROA); X variables include cash conversion cycle (CCC), accounts payable in days (AP), accounts receivable in days (AR), inventory held in days (INV). DFC is a dummy variable that takes a value of 0 for firms more financially constrained, and 1 otherwise. Z represents control variables that may influence companies' profitability. These variables are divided into two: corporate governance variables and company characteristics variables. Chief Executive Officer (CEO) tenure (TENURE), board size (BODSIZE), while company specific characteristics variables include: company size (FIRMSIZE), financial leverage (LEV), liquidity ratio (CR), sales growth (SGRWTH), industry classification (INDUST) are include but not reported, cash flow (CFL). XZ represents the interactive term (environmental, resource and management variables) with the main variables of working capital management. CERM, ARERM, APERM and INVERM denotes the interaction of environmental resource and management variables with cash conversion cycle accounts receivables accounts payables and inventory days held respectively. Environmental variables are proxy by industry classification, resource variable proxy by cash flow and management proxy by board size. V_{it} is the unobserved company effects (fixed effects) and ε_{it} the idiosyncratic shocks β_1 and β_2 are vectors of the parameters to be estimated. The subscript i denotes the nth company (i = 1... 225), and the subscript t denotes the tth year (t=1,...11). Regressions are estimated with individual random effects.

Return on Assets								
	(ROA) Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
CCC	-0.191***(-5.50)				-0.363***(-7.22)			
CCC*ERM					0.539***(5.47)			
AR		-0.292***(-7.01)				-0.498***(-8.92)		
AR*ERM						0.542***(5.85)		
AP			0.128***(3.98)				-0.209***(-5.19)	
AP*ERM							0.381***(5.12)	
INV				-0.260***(-5.49)				-0.230***(-5.19)
INV*ERM								0.569***(6.03)
TENURE	0.021***(0.314)	0.023***(3.84)	0.046***(3.65)	0.047***(3.75)	0.014**(2.06)	0.019***(2.99)	0.011(1.57)	0.018***(2.80)
FIRMSIZE	-0.319***(-8.72)	-0.246***(-7.33) -0.310***(-7.39)		-0.274***(-6.94)	-0.348***(-9.27)	-0.046***(-3.58)	-0.244***(-5.77)	-0.270***(-7.51)

Table 11 Cont.d

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
LEV	0.013***(3.92)	0.004(1.47)	0.007** (2.08)	0.007**(2.06)	0.018***(4.87)	0.019**(2.84)	0.012***(2.98)	0.013***(3.30)
CR	-0.035*(-1.68)	-0.061**(-4.43)	-0.053***(-4.15)	-0.057***(-4.33)	-0.036*(-1.67)	-0.064***(-5.35)	-0.065***(-2.70)	-0.082***(-3.53)
ATAN	-0.001***(-6.18)	-0.001**(-4.57)	-0.008**(-3.99)	-0.001***(-5.26)	-0.001***(-7.36)	-0.001***(-5.00)	-0.001(-4.60)	-0.001***(-5.95)
BODSIZE	0.025***(2.85) 0.059(1.32)	0.009 (1.40)	0.011 (1.48)	0.010(1.40)	-0.031**(-2.33)	-0.046***(-3.54)	-0.033**(-2.48)	-0.050***(-3.66)
SGRWTH		0.023(0.70)	0.003(0.96)	0.022(0.80)	0.005(1.21)	0.006(0.44)	0.003(0.60)	0.001(0.43)
DCF	0.669***(7.84)	0.591***(7.85)	0.576***(7.45)	0.584***(7.54)	0.351***(3.57)	0.272***(2.88)	0.578***(7.45)	0.584***(7.54)
CONSTANT	-0.617**(-2.23)	-0.568(-2.30)	-1.885***(-9.64)	-0.532(-1.23)	-1.610***(-4.38)	-1.538***(-4.72)	-2.632***(-7.77)	-2.622***(-7.77)
Industry dummies	Included	Included	Included	Included	Included	Included	Included	Included
Individual (RE)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2475	2475	2475	2475	2475	2475	2475	2475
R-SQ	15	14	12	11	20	19	12	16
Akaike	5583	7102	7044	7170	4960	6296	5789	6392

***Significant at 0.01 level; **Significant at 0.05 level; *Significant at 0.10 level; t-statistics are in parentheses.

8.4.1.3 Accounts Receivables Period

Results of model 2 from Table 11 reveals a significantly negative relationship between accounts receivable period and ROA in all the models (model 1 $b = -0.292$, $p < 0.01$; model 6 $b = -0.498$, $p < 0.01$). This suggest that by lowering the accounts relievable day period, firms free up cash quickly to make payment of bills on time in order to enjoy early payment discounts and also avoid the costly need of borrowing to fund investment in customers (Martinez-Sola et al., 2013). This helps to improve their profitability. The study also found a significantly positive relationship between the interactive term (AR*ERM) and profitability. Comparing the akaike test criteria and the r-square for the best fitted model to explain the relationship, it is found that the interactive models (model 5, 6, 7 and 8) have the lowest akaike test criteria and high r-square values than those models without the interactive effect (model 1, 2, 3 and 4). This suggests that the interaction of environmental, resources and management factors significantly moderates the relationship between accounts receivables and profitability.

8.4.1.4 Accounts Payable Period

The coefficient of accounts payable period is significant and positively ($b=0.128$, $p < 0.01$) related to ROA at the 1 per cent level of significance in both. Therefore by delaying payments firms could enhance their profitability when they take advantage and use suppliers' credit for working capital needs. However, in the interactive model (model 7), the study rather found an insignificant relationship between the coefficient of accounts payable ($b=-0.208$, $p > 0.1$) and profitability. In terms of the coefficient of the interactive effect (AP*ERM), they study found a significantly positive relationship between accounts payable, its interactive and profitability. The results indicate that the environmental resource and management factors positively moderate the relationship between working

capital and profitability since the interactive effect models lower akaike test values and high r-square values than models (1, 2, 3 and 4).

8.4.1.5 Inventory Holding Period

The study also found the coefficient of inventory holding period to be negatively related to ROA at the 1 per cent level of significance in both the direct and indirect models (model 4 and 8) respectively. Evidence from the study suggests that a firm's profitability could be reduced when it holds high amount of inventory. This is because maintaining a high level of inventory represents amount of the companies' money locked up on the inventory. This may result in a sub-optimisation of financial resources as the opportunity cost of investing the funds on profitable projects to enhance the firms' profitability is forgone. The study also found a significantly positive relationship between the coefficient of the interactive term ($b= 0.569$, $p<0.01$) of inventory management, its contingencies in model 8 and profitability. Comparing the akaike test criteria and the r-square for the best fitted model to explain the relationship, it is found that the interactive models (model 5, 6, 7 and 8) have the lowest akaike test criteria and high r-square values than those models without the interactive effect (model 1, 2, 3 and 4). This evidence supports hypothesis H₈ stated in chapter six that the relationship between inventory holding period and profitability is positively moderated by environmental, resource and management factors of the firm

8.5 CONCLUSION

The chapter presented empirical results on the relationship between working capital management and profitability on a sample of 225 listed companies on the main market of London Stock Exchange using the contingency theory approach. It adopted environmental, resources and management factors of the firm as key contingency variables as suggested by Luthans and Steward (1977). The study was structured into two main sections of which three forms of control variables (corporate governance and company characteristics) were incorporated to estimate the relationship.

In the first section, the study incorporated organisational contingencies (environmental, resources and management factors) postulated in the contingency theory framework. In order to achieve these two objectives, the study interacted the four measures of WCM (CCC, AR, AP and INV) with the three key contingent variables (environment, resources and management) as postulated by contingency theory. In the second section, the study presented a robust test analysis on the relationship between working capital management and profitability. The rationale of this section was to demonstrate how the findings obtained are robust to alternative empirical estimations. Following Baños-Caballero et al. (2013) the study divided the sample into two groups, based on the median cash flow value. Thus, firms with a cash flow above the sample median are assumed to have high available cash flow, while those below the sample median are assumed to suffer from a lack of cash flow (Baños-Caballero et al., 2013). The rationale for the choice of firms' cash flow is driven from the argument of Moyen (2004) and Baños-Caballero et al. (2013) that; firms' investment in working capital management is sensitive to cash flow constraints. Evidence from the study confirms Hill et al. (2010) argument that financial capacity of the firms

positively influences company profitability. However it was found that results of the main explanatory variables generally remain unchanged from that reported earlier. Based on the akaike test criteria values and r-square values obtained from this estimation, the study found that models that incorporated the interactive terms better explain the relationship between working capital and profitability. The financial constraint company criteria confirm that the firms' environmental, resource and management factors significantly moderate the relationship between working capital, its components and profitability. Therefore, the study supports the argument of Baños-Caballero et al. (2013) that there exists a non-linearity in the relationship between working capital management and profitability. However in the study, it was found that working capital management has an indirect effect on profitability. Its impact is constrained and modified by organisational contingencies (environmental, resources and management factors) of the firm. Therefore firms must align their working capital management policies with their environment and also arrange their resources internally to support such an alignment as postulated in the contingency framework. Importantly, any misalignment can significantly affect firm profitability (Miles and Snow, 1978). As a result, it suggests the need for firms to introduce policies that are appropriate to their organisation s' own resources to face the opportunities and threats that exist in the general business environment in order to improve their financial performance.

CHAPTER NINE

SUMMARY AND CONCLUSION

9.1 INTRODUCTION

This chapter presents a summary and conclusion of the study. The section also provided a discussion on some of the policy implications, limitations of the study and possible insight for future research. The remainder of the chapter is organised as follows. Section 9.2 provides the research objective of the study. Section 9.3 presents a summary of the methodology and research techniques adopted for the study. Section 9.4 summarise the policy implication of the study. The contribution of the study is summarised in section 9.5. In section 9.6, the study presents the main limitations of the study. Potential insight for future research and improvements is presented in section 9.7.

9.2 RESEARCH OBJECTIVES

The focus of this study was to improve upon the understanding of the relationship between working capital and profitability on a panel of 225 listed companies on the main market of London stock exchange. The central hypothesis is that the interaction of environment, resources and management variables (Luthans and Steward, 1977) helps to explain differences in profitability among firms. This connects with the contingency theoretical framework and other empirical research devoted to the analysis of working capital management and profitability. The study also incorporated three main objectives in order to further understand the dynamics of this relationship. These include:

1. Estimating the relationship between working capital management and its components and profitability as per extant research.

2. Determining whether the effect of working capital management on profitability is contingent on the interaction of environmental, resource and management variables of UK firms.
3. Investigating whether the effect of the components of working capital management (accounts payables in days, accounts receivables in days, and inventory held in days) on profitability is contingent on the interaction of environmental, resource and management variables of UK firms.

9.3 RESEARCH METHODOLOGY AND METHODS

The population for the study was taken from listed companies on the main market of London Stock Exchange (LSE) for the period 2001 to 2011. The choice of the period was guided by UK Late Payment of Commercial Debts (Interest) Act 1998 which was subsequently amended to bring it into line with the EU Late 2002 Payment directive. Against this backdrop, the study extends the research data to cover the entire period of the old and new late payment legislation. In order to arrive at the final sample, the study considers non-financial companies that have their financial statement covering the entire period under consideration, which is from 1st of January 2000 to 31st of December 2011 inclusive. Non-financial firms were considered because financial companies have different accounting regulations to non-financial companies (Deloof, 2003). Also financial services firms' financial characteristics and investment in working capital are largely different from non-financial companies (Falope and Ajilore, 2009). The two criteria were necessary to allow for easy comparability with similar studies and to permit the use of balanced panel data, which has the advantage of more degrees of freedom and less multicollinearity among variables (Gujarati, 2003). As a result of the strict application of these two criteria the final sample was narrowed down to 225 companies.

9.4 RECOMMENDATIONS/POLICY IMPLICATIONS

There are many implications of the results reported in this thesis. First, evidence of the study demonstrates the importance of incorporating organisational contingencies in formulating policies on firms' financial performance. Results of the study suggest that the impact of working capital management on profitability is positively moderated by organisational contingencies of the firm. This clearly shows that there are some constraining factors that inhibit companies from effectively managing working capital to maximise profitability. Therefore policy makers over time should focus on adjusting their working capital management strategies to the demands of these contingencies in order to improve firms' profitability as any significant misalignment could negatively affect firms' performances. Third, the study also found the external environment to significantly have an influence on the relationship between working capital management (WCM) and profitability of companies. The business environment according to Porter (1980) set bounds on the strategies and profitability of firms. Some of the external environmental factors that can possibly hamper the relationship include: the bargaining power of between the suppliers and customers (Porter, 1980), industrial structure (Hawawini et al., 1986; Filbeck and Krueger, 2005) and the prevailing economic conditions of companies (Wilson, 2008). In an industry with few suppliers but many customers, suppliers determine the price of the products and even the terms of credit to be offered than an industry with more suppliers but fewer customers. Also during periods of economic down turn, businesses bear the brunt of the credit squeeze, as a result, companies, tend to offer even more generous credit terms to win business (Wilson, 2008). Besides, fast growing firms or those operating in competitive markets are more likely to offer additional credit to extend their market share; in tend, they might be expected to demand more credit from their suppliers

to create equilibrium in their cash conversion cycle (Paul and Boden, 2011). Therefore in formulating working capital management strategy, policy makers must aim at aligning the strategy with demands of their environment.

More so, the findings of the study confirm that, the efficacy of the firms' policy significantly depends on the ability of the firms to arrange internal resource to support such policy. Firms must focus on adjusting their working capital management strategies to meet their resource capability (Mol and Wijnberg, 2011) in order to improve firms' profitability. For instance, a firm may adopt a conservative policy to increase investment in working capital so as to stimulate sales thereby increasing profitability or rather adopt an aggressive working capital management by minimising the amount of accounts receivable and inventory held in order to reduce cost associated with warehousing, storage and insurance so as to increase the firm's profitability. However each of these policies can only be achieved based on the resource (Mol and Wijnberg, 2011) of the firm. According to Hill et al. (2010) investment in working capital depends on internal financing resource capability, external financing costs, capital market access and financial distress of the firms. Companies with available cash flow may take advantage of the cash to make bulk purchases which may reduce the procurement cost of production. They may be in a better position to pursue a conservative working capital management than financially constrained firms. Firms with limited cash flow strive to achieve a reduction in investment in working capital so as to avoid the need for expensive external finance. With available Cash flow holdings, firms are able to lengthen their cash conversion cycle, which can improve company profitability by increasing sales (Deloof, 2003). Therefore in formulating working capital management policies to enhance profitability, policy makers must focus on aligning such a policy to meet their resource capability. As a result, the study suggests the need for firms to introduce policies that are appropriate to their

organisations' own resources to face the opportunities and threats that exist in the general business environment in order to improve their financial performance.

Furthermore, results from the panel data analysis also indicates that a firm's financial performance could also be influenced by their management capability as suggested by Luo et al. (2012). Evidence of the study support the argument that corporate governance variables such as Chief Executive Officer (CEO) tenure and Board size affects profitability of firms. As a result the study suggests the need for policy makers to seriously consider corporate governance when formulating firms' financial profitability policies. Policy makers of listed companies on the main market of London Stock Exchange, are encourage to comply with the UK's combined code on corporate governance as its compliance results to enhancing profitability of firms. For example, with a large board size, the possibility of CEO dominance and influence is greatly minimal. It makes it difficult for the CEO to influence the decision of the board due to its size. This helps to minimise CEO domination and pursuant of personal interest thereby leading to profitability. Also, a Chief Executive Officer (CEO) that has spent a long time at his or her post will become more comfortable and will use their power and knowledge gained to seek their own interest at the expense of profitability.

Secondly, the results of the study demonstrate the importance of short-term financial decisions of the firms to policy makers. Traditionally, the scope of current corporate finance literature has been long-term financial decisions such as analysing investments, capital structure, dividends or company valuation (Garcia-Teruel and Martínez-Solano, 2007). Consequently, this study acknowledges that, the investment that firms make in short-term assets significantly affects their profitability. The actual short-term financial decisions about how much to invest in the customer and inventory accounts, and how much credit to accept from suppliers, are reflected in the firm's working capital, which has

been measured by the four components namely: accounts payable, accounts receivable, inventory holding period and the cash conversion cycle which represents the average number of days between the date when the firm must start paying its suppliers and the date when it begins to collect payments from its customers. Therefore the study suggests that financial managers need to prioritise the investment and management of working capital since the management of working capital affect both profitability and risk of companies (Smith 1980). It is acknowledged that many UK businesses have failed because of poor credit management (Perrin, 1998; Summers and Wilson, 2000) and it's evident that the main source of this problem is in late payment among business organisation s in the UK. When payments are overdue and the payment date becomes uncertain then the financing costs, and management time involved in chasing payments and financing the delay can seriously erode the profitability of the sale and put pressure of the businesses own relationships with its bankers and suppliers (Wilson, 2008).

On the other hand, the findings of the study also identified three principal components of working capital management significant in determining the financial value of firms. These include: cash conversion cycle, accounts payable and accounts receivables. Evidence from the study supports the argument firms that efficient management of these variables significantly improve profitability for firms. The study found that most profitable firms are able to recover receipts from credit sales quickly whiles slowing down their cash disbursements as suggested by Nobanee (2009). Therefore, policy makers need to properly manage the time lag between the firm's expenditure for the purchase of raw materials and its collection of sales of finished goods. This can be achieved by building an effective inter-business relationship with both their suppliers and customers in order to maximise the benefits of better understanding the needs of each customer to so as to develop a tailor-made credit arrangement for each customers thereby reducing the risk of default. An

effective inter-business relationship could also lead to better terms being offered to the company by suppliers. Some authors such as Afrifa (2013) suggests that the management of the time lag between the firm's expenditure for the purchase of raw materials and its collection of sales of finished goods could also be achieved by devoting more time towards the management of working capital and also incorporating it into the corporate strategy of companies. This will help firms to influence the value of the company (Kieschnick et al., 2008) and also use their working capital strategy as a competitive weapon (Ruback and Sesia, 2000).

Finally, the results reveal the effect of specific company characteristics on the profitability of companies. These specific company characteristics include company size, financial leverage, assets tangibility liquidity ratio and cash flow and sales growth. Apart from sales growth, the rest of the variables have been found significant in estimating the relationship. The study also found that these variables have different level of effect and influence on firms profitably. As a result the study suggests the need for policy makers to identify their specific company characteristics in order to work towards improving those areas so as to improve profitability.

9.5 CONTRIBUTION TO KNOWLEDGE

The primary contribution of this study to the finance literature is the introduction of an indirect pathway through which working capital management affects profitability. Current studies have traditionally opined that working capital management has an impact on profitability, without considering the potential dynamic effects, which depend on the environment, resource and management capability of the firm. While Luthans and Steward (1977) in the contingency frame highlight the impact of these three organisation al contingencies (environment, resource and management) on a firm's financial performance,

the study extended this stream of knowledge by demonstrating their impact in estimating the relationship between working capital management and profitability. Although the contingency framework has been adopted and found significant in both theoretical and empirical studies particularly on board functioning and effectiveness (Forbes and Milliken, 1999; Zona et al., 2012; Nicholson and Kiel, 2003), there is still no study that used contingent theory to link working capital management and profitability. Consistent with Zona et al. (2012), results of the study confirm the relevance of the contingency theory. This study is the first to document the application of contingency theory in explaining the relationship between working capital management and profitability.

The other significant contribution of the research is that it demonstrates that the impact of (INV) and (AP) on firms' profitability changes under different conditions. Like other previous studies (Rajeev, 2008; Tauringana and Afrifa, 2013), the study found that WCM component (INV) does not drive the profitability of many firms. However, when ERM variables were taken into account, the results show that INV had a significant impact on profitability. Similarly, while WCM component (AP) does have a significant direct effect on profitability, the results show that when ERM variables are taken into account, AP does not have a significant impact on profitability. This suggests that the impact of (INV) and (AP) on firms' profitability needs to be understood in the context of firm-specific characteristics. This will help managers identify the conditions under which firms are more effective as decision-making groups and which contingencies enhance or constrain firms' ability to enhance profitability through investment in working capital. For instance, Sprague and Wacker (1996) contend that a firm's inventory is controlled rather than managed in order to drive the practice and profitability of firms. The rationale is that inventory management is not generally treated as a critical or strategic activity for firms because it constitutes part of the businesses strategic objectives. According to their

evidence, firms need to control their inventory by formulating detailed set of activities surrounding the order practices of individual inventory items taking into context the firm-specific characteristics which Luthans and Steward (1977) classified as environmental, resource and management factors. On the other hand, since (AP) constitutes a significant portion of firms' current assets used as a source of short-term financing for companies (Garcia-Teruel and Martinez-Solano, 2010) firms need to efficiently management rather than controlled (AP) to enhance their profitability.

Finally, the study broadens research on working capital management and profitability in UK where current knowledge and understanding of the working capital management policies is currently inadequate in view of the fact that late payment and working capital management has been identified as the primary source of business failure (Wilson, 2008). Many UK businesses have failed because of poor credit management (Perrin, 1998; Summers and Wilson, 2000) and it is evident that the main source of this problem is in late payment among business organisations in the UK.

9.6 LIMITATIONS OF THE RESEARCH

The study acknowledged a number of limitations despite the above implications expatiated above. The first limitation identified for this study is the sample size. The study has a relatively small sample size of 225 listed companies on the main market of London Stock Exchange. The sample is considered small in view of the fact that out of 755 listed non-financial firms listed firms on the main market of London Stock Exchange; the sample only represented 30 per cent of the sample. Even though in terms of sample representation, the study's sample fell within Sekaran (2000) proposed percentage guidance on sample representation, a larger sample might have been preferred as could provide evidence of a more robust and reliable relationship between working capital, its contingencies and profitability. This is because statistically the larger the sample size the more reliable the

results (Hill and Alexander, 2006). But compared to prior studies (Tauringana and Afrifa, 2013; Mathuva, 2010; Gill et al., 2010) on working capital management, the thesis sample size of 225 is larger. Tauringana and Afrifa (2013) adopted a sample of 160 listed British SME firms on AIM of the London Stock Exchange for a period of four years to estimate the relative importance of working capital management to the profitability of SMEs. On the other hand, a sample of 88 listed manufacturing firms on New York Stock Exchange was adopted by Gill et al. (2010) for a period of 3 years to estimate the relationship between the firms' working capital management and their profitability. In estimating the relationship among some selected production Turkish firms listed on the Istanbul Stock Exchange, Sen and Oruc (2009) rather had a sample of 49 companies. This is a much lower sample compared to that of this thesis. Despite this evidence, the study still advice scholars to be cautious about generalisation of the findings of this thesis.

Secondly, the eleven year period adopted by the study seems to be too long compared to evidence of prior studies such as (Tauringana and Afrifa, 2013; Deloof, 2003; Lazaridis and Tryfonidis, 2006; Raheman and Nasr, 2007) and hence a limitation for the study. A longer period of time has the advantage of capturing major changes in the economy or business cycle. However, the major downside of having a longer period of study as in the case of this thesis is that majority of the companies are dropped from the sample due to the non-availability of financial data for the entire period under consideration. Some of the companies were not listed as at that period or had been delisted or merged with other companies as a result the study excluded those companies from the sample which virtually narrowed the sample size to about 30 per cent of all listed non-financial firms on the main market of London Stock Exchange. Statistically, 30 per cent suggest is a sufficiently large sample (Anderson et al., 2007) but a larger sample would have been much preferred because of its advantage to the research.

Another potential limitation identified in the study is the source of the data. The data for the study was extracted from three data sources: Thompson one Analytics, Analyse Major Databases from European Sources (AMEDEUS) and Boardex. Majority of the database involving both accounting and financial performance figures and ratios were extracted from Thompson one Analytics, Analyse Major Databases from European Sources (AMEDEUS) while data on corporate governance variables were also obtained from Boardex. The major weakness of using this source of data is that any major error identified in the data could significantly affect the results of the study. As a result the study would have preferred retrieving the data from the company website of each individual company. However in order to reduce the likelihood of such occurrence, both financial and corporate governance information obtained from the database was further verified from the website each of the companies. Despite the limitation identified above, the three data sources: Thompson one Analytics, Analyse Major Databases from European Sources (AMEDEUS) and Boardex have extensively been adopted by previous studies (such as Tauringana and Afrifa, 2013; Garcia-Teruel and Martinez-Solano, 2007; Ruibel and Hazak, 2011) and have justified the reliability of each of these dataset.

Furthermore, the study only relied on one measure of profitability (return on assets). It adopted return on assets (ROA) as the measure of profitability because it has more desirable distributional properties than other accounting measures such as return on equity (Core et al., 2006). Besides its adoption in the model allows easy comparability with similar studies (e.g., Deloof, 2003; Tauringana and Afrifa, 2013; Lazaridis and Tryfonidis, 2006). Various researchers have also adopted a number of measures for firm's profitability. Net operating profit was used by Raheman and Nasr (2007) as their main measure of profitability while Lazaridis and Tryfonidis (2006) used gross operating profit in their study. Vishnani and Shah (2007) on the other hand rather employed return on

capital employed to represent companies' profitability. The variation in the proxies used to measure companies profitability shows that a single measure cannot represent a complete measure of companies' profitability and therefore the results should be interpreted with caution.

Also the findings of the study are only limited to companies listed on the main market of London Stock Exchange. As a result, the study cautions scholars against generalisation using the findings of this thesis on non-listed companies. This is because companies found in each of these categories (listed and non-listed) exhibits different features and characteristics. For instance, in terms of access to finance, listed companies have unlimited access to finance than non-listed firms who mostly rely on to only owners' equity and finance from friends and families. Also listed firms are able to influence their dynamics of working capital management due to the high reputation they receive from being listed (Marchisio and Ravasi, 2001; Beatty and Ritter, 1986; Sirgy, 2002). For some investors, companies that have membership of a stock market often signal the quality of the company. Furthermore, the study could not adopt all the firms' organisational contingencies. The effects of other contingencies have influence the relationship between working capital management and profitability, key example is the impact of the business or economic cycle on firms.

9.6 FURTHER RESEARCH

The study's limitations presented above open several avenues for further studies and improvement. Further and more extensive analyses on multiple contexts and countries would be required to establish causal effects between the variables on other stock exchanges. It would be interesting to investigate this relationship on other markets with different economic climate in order to determine whether the same pattern of findings will

be exhibited. Further evidence from the study could be explored by replicating the findings of this study particularly in a well-developed capital market where access to finance is readily available to businesses as in the case of the UK. According to Demircuc-Kunt et al. (2006), companies operating in countries with more developed banking systems grant more trade credit to their customers, and at the same time they receive more finance from their own suppliers.

Secondly, the study adopted ROA as the only measure of profitability. This is because; ROA has more desirable distributional properties and has ability to remove size effects, therefore allowing for inter-industry comparison (Lev and Sunder, 1979) than other accounting measures such as return on equity (Core et al., 2006). Besides it also allow easy comparability with similar studies (e.g., Deloof, 2003; Tauringana and Afrifa, 2013). In spite of this, the study advocates the need to also adopt other measures of profitability in examine the relationship.

Thirdly, the study also advocates the need to estimate the relationship in limited or short period of time or rather relax some of the sample selection criteria in order to avoid cases where majority of the companies were dropped from the sample due to the non-availability of financial data for the entire period under consideration. This will help increase the sample size for the study to enhance more reliability of the results (Hill and Alexander, 2006).

Fourthly, the study could also be replicated to estimate the relationship among SME companies listed on a stock exchange as a result of the fact that listed SMEs have access to unlimited finance through the issue of shares and are able to obtain higher reputation because of the stringent regulations imposed on it. The higher reputation of listed SMEs

will allow for good dealings with both suppliers and customers, which will improve the profitability (Tauringana and Afrifa, 2013).

Fifthly, the study only adopted board size, cash flow and industry as key organisational contingencies (i.e. management, resource and environmental variables respectively) to estimate their impact on the relationship between working capital management and profitability. The study recommends the need to incorporate other organisational contingencies to enrich the discussion.

Finally, further studies can also explore by incorporating other corporate governance and firm characteristics as controls to measure the relationship between working capital management and profitability. In terms of corporate governance, the influence of CEO age, block shareholders, proportion of non-executive directors, directors' remuneration, institutional shareholders and CEO duality could be investigated to determine their influence on the relationship between working capital management and profitability. Other firms' characteristics such as the influence of company age, gross working capital efficiency and working capital requirement could also be explored in further research to measure their influence on firms' profitability.

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