

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND
TECHNOLOGY (KNUST)**

INSTITUTE OF DISTANCE LEARNING (IDL)

**THE EFFECT OF WORKING CAPITAL MANAGEMENT ON FIRM
PROFITABILITY**

**A STUDY OF LISTED MANUFACTURING FIRMS ON THE GHANA STOCK
EXCHANGE**

EMMANUEL .K.B. BADOE

**A THESIS SUBMITTED TO THE INSTITUTE OF DISTANCE
LEARNING (IDL) KNUST, IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF A COMMONWEALTH
EXECUTIVE MASTERS DEGREE IN BUSINESS ADMINISTRATION
(CEMBA)**

MAY, 2011

TABLE OF CONTENTS

Content	Page
DECLARATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
TABLE OF CONTENT.....	vi
LIST OT TABLES	x
LIST OF FIGURES	xi
CHAPTER ONE	1
INTRODUCTION.....	1
1.0 Background	1
1.1 Statement of the Problem	2
1.2 Objectives of the Study	3
1.3 Research Questions	4
1.4 Significance of the Study	4
1.5 Research Methodology	5
1.6 Scope of the study	5
1.7 Organization of the Study	5
CHAPTER TWO	6
LITERATURE REVIEW.....	6
2.0 Introduction	6
2.1 Theoretical Literature.....	6
2.1.1 Working Capital Management	6
2.1.2 Working Capital	8
2.1.3 Components of Net Working Capital	10
2.1.3.1 Current Assets	11
2.1.3.2 Current Liabilities	16
2.1.4 Importance of Working Capital	17

2.1.5 Sources of Working Capital	18
2.1.6 Determinants of Working Capital	19
2.1.7 Excess and Inadequate Working Capital	23
2.1.8 Working Capital Policy	25
2.1.8.1 Aggressive Policy	26
2.1.8.2 Conservative Policy	27
2.1.8.3 Defensive Policy	28
2.1.9 Cash Conversion Cycle	29
2.1.10 Components of Cash Conversion Cycle	30
2.1.11 Firm Profitability	31
2.1.12 Measurement of Firm Profitability	32
2.1.13 Liquidity versus Profitability	35
2.1.14 Financial Assets	36
2.1.15 Financial Debt	36
2.2 Empirical Literature	37
2.2.1 Working Capital Practice in the United States	42
2.2.2 Working Capital Practice in European Companies	43
2.2.3 Working Capital Practice in Developing Asian Countries	45
2.2.4 Working Capital Practice in Sub-Saharan Africa	46
2.2.5 Conclusion	48
CHAPTER THREE	49
METHODOLOGY	49
3.0 INTRODUCTION	49
3.1 Research Design.....	49
3.2 Description of the Sample	49
3.3 Sampling Method	50

3.4 Validity of Data	51
3.5 Reliability of Data	51
3.6 Model Specification	52
3.7 Definition and Measurement of Variables	53
3.7.1 Return on Assets.....	53
3.7.2 Average Collection Period.....	54
3.7.3 Average Payment Period.....	54
3.7.4 Inventory Turnover in Days	54
3.7.5 Cash Conversion Period	54
3.7.6 Current Ratio	55
3.7.7 Leverage	55
3.7.8 Firm Size	55
3.8 Data Sample	55
3.9 Data Analysis	55
CHAPTER FOUR	56
PRESENTATION AND DISCUSSION OF THE RESULTS	56
4.0 Introduction	56
4.1 Data Description	56
4.2 Descriptive Statistics	57
4.3 Correlation Analysis	58
4.4 Multivariable Regression Analysis	59
4.4.1 Discussion of the Results	60
4.5 Conclusion	62

CHAPTER FIVE	63
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	63
5.0 Introduction	63
5.1 Summary of the Study	63
5.2 Conclusion of the Study	64
5.3 Recommendations	65
5.4 Limitations of the Study and Suggestion for Further Studies.....	65
References	66
Glossary	73
Appendix 1	74



LIST OT TABLES

	Page
1. Table 3.1 : Data Description	53
2. Table 4.1 : Descriptive Statistics of the Variable	57
3. Table 4.2 : Correlation Matrix of the Variable	58
4. Table 4.3 : Regression of Profitability on Working Capital Variables	60



LIST OF FIGURE

Page

Table 2.1 : Working Capital Cycle11

KNUST



DECLARATION

I hereby declare that this submission is my own work towards the award of the Commonwealth Executive Masters in Business Administration (CEMBA) and that to the best of my knowledge, it contains no material previously published by another person or any material which has been accepted for the forward of any other degree of the University, except where due acknowledgement has been made in the text.

KNUST

Emmanuel .K.B. Badoe

(PG: 3047509)

Student's Name and ID

.....
Signature

.....
Date

Certified by:

Mr. Jonathan N.O. Welbeck

Supervisor's Name

.....
Signature

.....
Date

Certified by:

Prof. Kwame Dontwi

.....
Dean of IDL

.....
Signature

.....
Date

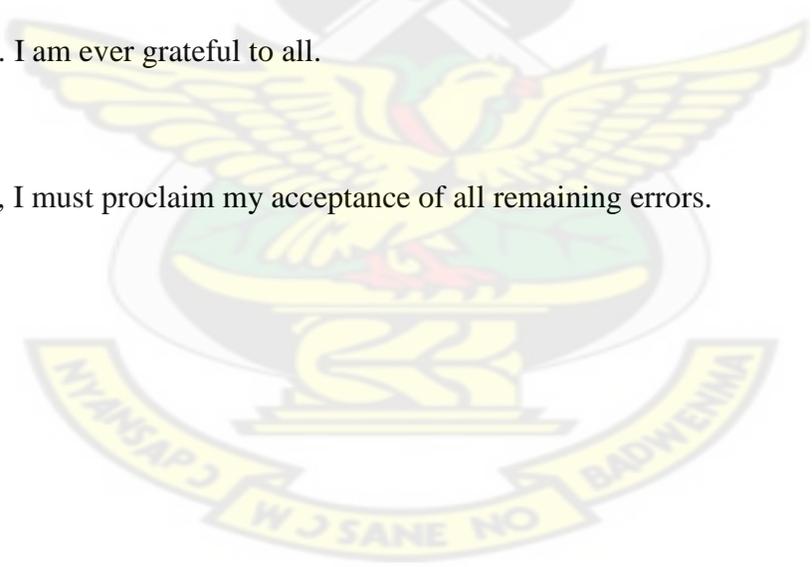
ACKNOWLEDGEMENT

I am ever grateful to the almighty God, the Creator and the Guardian, and to whom I owe my very existence. His guidance, care and love are amazing.

This thesis, while an individual work, benefited from the insights and direction from the following. First, my Supervisor, Mr. Richman Dzene exemplifies the high quality scholarship to which I aspire. He provided insights that guided and challenged my thinking, substantially improving my work. Second, I extend a warm gratitude to all lecturers of the Commonwealth Executive MBA program. Third, I expressed my gratitude to all the staff at Ghana Stock Exchange for their immense contributions they made towards my data collection.

Last but not the least I would like to thank my family and friends for their incessant support and approval. I am ever grateful to all.

Nevertheless, I must proclaim my acceptance of all remaining errors.



ABSTRACT

Researchers all over the world believe that one way of maintaining the high profitability is an efficient management of working capital. In order to manage working capital, a firm should have a defined policy.

Working capital is the lifeblood of every firm and if it is efficiently managed it becomes beneficial to the firm because it has a direct impact on firm's profitability but inefficient working capital management negatively impacts the firm's profitability. Working capital management is an important part of financial management and its primary task is concerned with the matching of asset and liability movements over time.

The study of the effect of different variables on working capital management was used and this includes Average collection period, Average payment period, inventory turnover in days, Cash conversion cycle, Debt ratio, Current ratio and the Size of the firm (measured in terms of natural logarithm of sales) on Return on Total asset as dependent variable of Ghanaian firms.

Descriptive and Regression were used for the analysis and the results show that there is a negative relationship between profitability and, the number of days receivables and the number of days account payable. However, the study found no relationship between the number of days of inventory and the cash conversion period and profitability for the selected manufacturing firms in Ghana. Besides, the study found that current ratio and the size of the firm affects profitability positively.

Some of the recommendations suggested were that, manufacturing firms should implement policies aimed at ensuring that the number of days of account receivables is shortened in order to improve on their profitability levels.

Also, manufacturing firms should endeavour to pay their debt obligations on time in order to avoid sending bad signals to the market that firms have some financial problems and it might go bankrupt resultantly its goodwill will be spoiled and the value of its shares will go down which may affect their operations.



CHAPTER ONE

INTRODUCTION

1.0 Background

Owners of businesses all over the world want to get some return on their investments depending on the amount of resources they invest. No matter how big or small the business may be, there is the need to put in place proper financial mechanisms that will sustain the firm in terms of growth and profitability. The increasing complexities and competition among modern day business have shifted corporate objective from solely profit maximization to include other things such as liquidity and solvency of the company.

Traditionally, corporate finance literature is centered on three main areas, namely, working capital management, capital structure and capital budgeting. The capital structure and capital budgeting talks about the management of long term capital while working capital management deals with investment and financing in short term period. It is believed that financial working capital management influences the performance of a firm's stock price and as such its important cannot be over-emphasized.

Efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on the one hand and avoid excessive investment in these assets on the other hand (Eljelly, 2004). Managers spend considerable time solving problems associated with working capital decisions. One reason for this is that current assets are short-lived investments that are continually being converted into other asset types. With regard to current liabilities, the firm is responsible for paying these obligations on a timely basis. Liquidity for the firm is not reliant on the liquidation value of its assets, but rather on the operating cash flows generated

by those assets (Soenen, 1993). It involves the decision of the amount and composition of current assets and the financing of these assets. Current assets include all those assets that in the normal course of business return to the form of cash within a short period of time, ordinarily within a year and such temporary investment as may be readily converted into cash upon need. The Working Capital Management of a firm in part affects its profitability.

An appropriate policy towards working capital management can create value for its owners and on the other hand, the effect of inadequate planning of working capital might cause a financial distress and firms can go bankrupt. This will lead to lost in shareholder value on investment. Working capital is considered the life blood of any organization and the topic has attracted research interest in both developed and developing economies. However, research on the issue in Ghana is virtually non-existent despite its importance. Thus, the purpose of this study was to investigate the effect of working capital management on the profitability of manufacturing firms listed on the Ghana Stock Exchange. The findings from the study was expected to help manufacturing firms in Ghana to better manage their working capital and achieve increased level of profitability.

1.1 Problem Statement

The ultimate objective of any firm across the globe is to maximize profit and pursue a long term growth amidst global competition. This cannot be achieved without effective management of funds, especially short term funds since liquidity management has great implication for the survival of the firm. This is because; the inability of firms to effectively manage their working capital may result in insolvency or bankruptcy problems. For instance, if a firm does not have enough funds to settle its short term debt obligations, it may be forced

to liquidate by its creditors. Thus, working capital management deserves to be given a proper attention since the very survival of the firm depends on it. Although, liquidity management ensures that firms are able to meet their short-term obligations, it comes with an opportunity cost. Holding too much liquidity may be at the expense of profitability (Padachi, 2006). Therefore, there is the need to assess the level of practice of working capital management in manufacturing firms in Ghana. Of particular interest is the relationship between working capital management and profitability. Does effective working capital management improve profitability? The study seeks an answer to this question by investigating the effect of working capital management on the profitability of Ghanaian manufacturing firms listed on the Ghana stock exchange.

1.2 Objectives of the Study

The general objective of this study was to examine the effect of working capital management on firm profitability by focusing on listed Ghanaian manufacturing firms. The specific objectives of the study are as follows;

1. To assess the effect of debtors collection period on firm profitability.
2. To investigate the effect of creditors collection period on firm profitability
3. To determine the relationship between stock turnover and firm profitability
4. To explore the relationship between cash conversion cycle and firm profitability

1.3 Research Questions

The study explores the following research questions;

1. Is there any relationship between debtor's collection period and firm profitability?
2. What is the relationship between creditor's collection period and firm profitability?
3. What is the relationship between stock turnover and firm profitability?
4. Does cash conversion cycle have any influence on firm profitability?

1.4 Significance of the study

Despite the numerous studies conducted which highlight the importance of working capital management, there is virtually no empirical study on the issue in Ghana. A proper management of working capital is required because if a company has too little investment in working capital then it means that company doesn't have sufficient quantity of materials and account receivables which might lead to loss in production and consequently culminating in a decline in sales and inability of the firm to respond to high market demand if need be. On the other hand if the investment in working capital is too big then a company has to bear the cost of storage of inventory, handling cost and opportunity cost (Arnold, 2008, p.529). The finding from the study was therefore expected to help manufacturing firms in Ghana to better manage their short term funds.

1.5 Research Methodology

Using annual financial reports of ten (10) selected manufacturing firms listed on the Ghana stock Exchange (GSE) between 2005 and 2009, the study analyses the relationship between working capital management and firm profitability. Correlation and multivariable regression methodology was adopted to test the relationship between the dependent variable and the independent variables. Detailed methodology is provided in Chapter three.

1.6 Scope of the study

The research is limited to ten (10) of the listed manufacturing firms on the Ghana Stock Exchange. The study employed annually reported data from 2005-2009. The choice of these manufacturing firms was informed by the availability and easy access to annual reports of these firms.

1.7 Organization of the study

The study is in five chapters. This current chapter discussed the background, statement of the problem, objectives, research questions, justification and research methodology of the study. Chapter two presents a summary of the existing theoretical and empirical literature. Chapter three deliberates on the methodology used for the study. Chapter four presents the empirical results obtained during the study and lastly, chapter five is devoted to the summary of the various findings of the study and their implications. It also highlights the limitations of the study and makes recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

The chapter is divided into two sections with the presentation of a wider concept of working capital, which can be seen as part of financial management.

The first section provides theoretical review of the concept of working capital management and its effect on firm profitability. In the theoretical framework of this study a discussion about the tools, strategies and implications of cash management is carried out in terms of company liquidity. Emphasis was put on how to improve firm liquidity and the usage of effective strategies and its benefits to businesses. Working capital management is an important part of financial management and its primary task is concerned with the matching of asset and liability movements over time. Working capital management looks at the profitability of shareholders wealth maximization and its impact of the firm. The second section also looks at the empirical review of the working capital practice in other countries and the relationship between efficient working capital and profitability. It also assesses the effect of control variable on firm profitability.

2.1 THEORETICAL LITERATURE

2.1.1 Working Capital Management

Working capital management refers to the management of the firm's current accounts to achieve a required balance among profitability and risk. Working capital management is important factor in the management of current assets and current liabilities. Therefore, the

management of the difference between the current assets and current liabilities is known as working capital management. It directly affects the profitability of the firm. Working capital management (WCM) looks at a wider concept that covers both inventory and work in progress and thereby combining elements of operations, production and financial management. Kaur, (2010) Working Capital Management refers to all management decisions and actions that ordinarily influence the size and effectiveness of working capital. It is concerned with the most effective choice of working capital sources and the determination appropriate levels current assets and their use.

Working capital is the lifeblood of every firm and if it is efficiently managed it becomes beneficial to the firm because it has a direct impact on firm's profitability but inefficient working capital management negatively impacts the firm's profitability. Working capital management is an important part of financial management and its primary task is concerned with the matching of asset and liability movements over time. The two main reasons for working capital management are liquidity and profitability. Liquidity focuses on meeting the financial obligation of an enterprise while Profitability is concerned with the maximization of shareholder's wealth.

Conflicts between these two goals can arise when for instance a profitable long-run investment opportunity erodes company's liquidity in the short-run (Pass and Pike, 1984, p.1). Working capital management is very often about trade-offs between these two main goals, since focusing entirely either on profitability or liquidity most probably shakes the balance between these two important components of company's financial status (Shin & Soenen, 1998, p.37). Pass and Pike (1984) emphasize also the importance of clearly defined goals, since the responsibility of the working capital management is often spread over many

departments in a company and several managers may pursue for different goals. The management of working capital creates value for the shareholders by increasing inventory level, account receivable, account payable, among others. The firms are capable of attaining competitive advantage by using effective and efficient utilization of resources.

2.1.2 Working Capital

Shin and Soenen have defined working capital as a “time lag between the expenditure for the purchase of materials and the collection for the sale of the finished products” (Hyun-Han Shin and Luc Soenen, 1998).

Vasarao (2010) also refers to working capital as the life blood and nerve centre of a business. Just as circulation of blood is essential in the human body for maintaining life, working capital is essential to maintain the smooth running of a business. For a business to run successfully there should be adequate amount of working capital to maintain day-to-day cash flow. Maintaining adequate working capital is not just important in the short run but also essential in the long run to ensure survival of the business.

Working capital plays an important role in firm's growth and profitability and is tightly interlinked with the concept of liquidity. There are two concepts of working capital which are Gross and Net Working Capital. The Gross Working Capital refers to the firm's investment in current assets. Net Working capital can be best described as the difference between the current assets of the company and its current liabilities (Braley and Myers, 2006, p.813). This can be narrated in the following way:

Net Working Capital = Current Assets – Current Liabilities

In this equation if current assets are in excess to current liabilities then working capital is known as net current assets, on the other hand if current liabilities are in excess to current assets then working capital means net current liabilities (Arnold, 2008, p.515).

Current assets are defined as those assets that can be converted into cash within one operating cycle. It includes inventories, account receivables, cash and cash equivalents, short-term investments and prepaid expenses, while current liabilities are obligations due to mature within one operating cycle. Current liabilities include trade payables, short-term borrowings and accrued expenses.

Working capital represents a significant part of firm's assets and liabilities. Medium and small companies tend to have relatively larger amount of capital tied in current assets and liabilities than bigger firms (Pass and Pike, 1984, p.1).

Profitability is a measure of profit generated from the business and is measured in percentage terms e.g. percentage of sales, percentage of investments, percentage of assets. High percentage of profitability plays a vital role to bring external finance in the business because creditors, investors and suppliers do not hesitate to invest their money in such a company (Gitman, 2002, p.61).

There are several measures of profitability which a company can use. Few measures of profitability include the following: Return of Total Assets, Return on Equity, Net Profit Margin, and Gross Operation Profit.

2.1.3 Components of Net Working Capital

Net Working capital can be best described as the difference between the current assets of the company and its current liabilities (Braley and Myers, 2006, p.813).

The two components of net working capital are current assets (assets with duration less than one operating cycle) and current liabilities (obligations with the maturity under than one operating cycle) and they include following things (Arnold, 2008, p.515)

Current assets

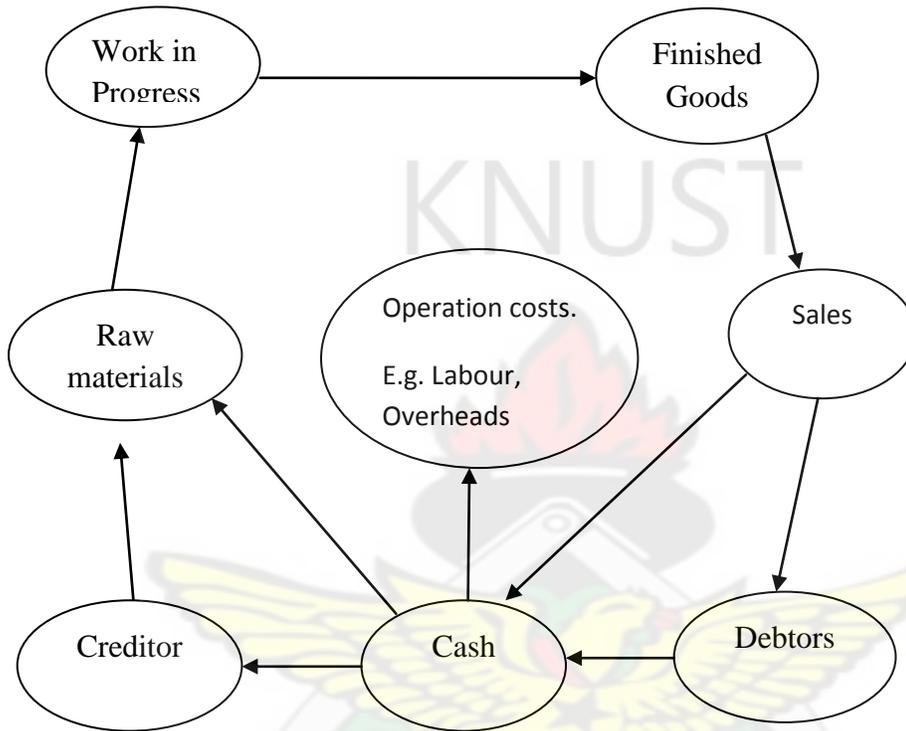
- Inventories
- Account receivables
- Cash
- Short term Investments

Current liabilities

- Account payables
- Short term debt

In order to understand the importance of working capital we need to understand the working capital cycle which is described in books of corporate finance. Working capital cycle includes all the major dimensions of business operations. It is quite clear that a bad management of a single account in this cycle might cause a big trouble for the non living entity which might leads to its death so, the management of working capital and balance between components of working capital is extremely important for the smooth running of business (Arnold, 2008, p.529-530). Figure 2.1 below shows the working capital cycle.

Figure 2.1: Working Capital Cycle



Source: Adopted from Glen Arnold (2008), p. 530

For better understanding of the concept of working capital we need to understand its component and subcomponents.

2.1.3.1 Current Assets

These are assets that can be converted into cash within one operating cycle. The management of these components is very important because poor management of current

assets can make it difficult to meet current liabilities. Current assets include following sub-heading:

- **Inventory**

The word inventory simply means the goods and services that businesses hold in stock. However, inventory is an important component of current assets because it is considered as liquid asset since it can be converted into cash quite easily. It comprises raw material, work in process and finished goods. Companies want to keep the inventory at a level which maximizes the profit and this level is known as optimal level. A firm can hold high level of raw material inventory in order to avoid delays associated with supply that might affect production. Therefore, the firm should have enough inventories to meet the unexpected rise in demand but the cost of holding this inventory should not exceed its benefit (Brealey and Myers, 2006, p.821).

Similarly, firm can reduce its finished goods inventory by reducing the production and by producing the goods only to meet the current demand but such a strategy can also create trouble for the company if the demand for the product rises suddenly. Such a situation might cause the customer dissatisfaction and even a loyal customer can switch to the competitors brand. In order for the firm to avoid excessive holding and ordering cost, it should have optimal level of inventory that will maximize profit. Holding cost involves utility bills, insurance, security expenses, and warehouse expenses among others. In short, carrying cost involves all the expenses which firms have to bear for on handling inventory. However, ordering cost is a cost that is associated with procuring raw material inventory. It includes

clerical expenses, management time and telephone expenses, etc. Ordering cost is a fixed cost and its effect can be reduced by ordering a big lot but big lot will increase the carrying cost.

On the other hand if a finance manager saves the carrying cost by ordering twice or thrice rather than one big lot then ordering cost will increase. In both cases profitability is directly affected. So, in order to find an optimal level managers have to find a balance between cost and benefit associated with different inventory levels.

Economic order quantity provides the balance between carrying cost and ordering cost and helps the finance manager to find out the quantity of ordering lot by considering the ordering cost, carrying cost and annual usage (Andrew and Gallagher, 1999, p.472:473).

$$EOQ = \sqrt{\frac{2(\text{Annual usage in units}) * (\text{Order cost})}{(\text{Annual Carrying Cost Per Unit})}}$$

- **Account Receivables**

Firms would like to maximize sales through attraction and satisfaction of the customer at a profit. One of the ways it can increase sales is offering a trade credit. It means a company sells its product now to receive the payment at specify date in the future. Hill and Sartoris (2005) found that one sixth of total assets for manufacturing corporations consist of account receivables and because of its huge proportion in the total assets, it can become a problem for

the organization in a way that it requires more financing for the period for which payment is due from the customers. Account receivables also have opportunity cost associated with them because company can't invest this money elsewhere until and unless it collects its receivables.

More account receivables can raise the profit by increasing the sale but it is also possible that because of high opportunity cost of invested money in account receivables and bad debts the effect of this change might turn difficult to realize. On the other hand, if a company adopts a policy to have a low level of account receivables then it can reduce the profitability by reducing the sales but it can contribute to the profit by reducing the risk of bad debts and by reducing investment in the receivables (Andrew and Gallagher, 1999, p.465). Companies want to have a level of account receivables which maximizes the profitability. The level of account receivables is largely influenced by the credit policy offered by the company to creditors. Strict policy will reduce the collection period and account receivables and if company offers relaxed credit policy it will raise the level of account receivables.

- **Cash**

Cash is considered as part of current assets which is very important for the smooth running of the business. Cash includes both cash in hand and cash at bank. Companies want to have enough cash reserve to exploit the investment opportunities available in the future but having a very high level of cash reserve can turn out to be an idle resource. The maximum level of cash reserve depends on investment opportunities available in the future, return on these investments and transaction cost of making the investments (Andrew and Gallagher, 1999,

P.456). Holding a cash reserve is justifiable for all the businesses but how much cash a company should have? It is a big and very important question because too little cash might push a company in a situation where it will not be able to pay its current liabilities. On the other hand having high cash balance will not produce any return. The minimum level of cash reserve depends on the ability of a company to raise cash when it is required, future cash needs and company's will to keep cash to safeguard future unexpected events. So, there is a fair possibility that cost of holding marketable securities might exceed their benefit because in order to convert marketable securities into cash it has to pay some transaction cost (Brealey and Myers, 2006, p.821-822).

- **Short term Investments**

These are the investments in the money markets and it includes short term securities, Treasury bills, commercial papers etc. Whenever a firm needs some cash more than its cash reserves it produces cash by liquidating its investments. Investments are treated as primary reserves or secondary reserves for liquidity purposes. Furthermore investment in the money market is considered as a good utilization of idle cash resource which gives return (Hill and Sartoris, 1995), p.288). Finance managers should consider the short term interest rate, transaction cost and market conditions before making any investment. If the benefit of investment is equal to its cost then it doesn't worth to invest money.

2.1.3.2 Current Liabilities

These are the obligations with a maturity date less than one operating cycle. It is very important component of balance sheet which needs to be managed carefully. It includes following:

- **Accounts Payables**

Accounts payables are debt that must be paid off within a given time frame to avoid default. It is the simplest and cheapest way of financing an organization through longer credit period. Account payables are generated when company purchases some products for which payment has to be made no later than a specified date in the future. Account payables are a part of all the businesses and have some advantages associated with it e.g. it is available to all the companies regardless of the size of the company and earlier payment can bring cash discount with it (Arnold, 2008, p.479-482). Companies not only need to manage their account payables in a good way but they should also have the ability to generate enough cash to pay the mature account payables because if a company fails to generate enough cash to fulfill the mature account payables then such a situation will pass the negative signal to the market and it will directly affect the share price, relationship with creditors and suppliers. In this situation it will be difficult for the company to raise more funds by borrowing money or get more supplies from the suppliers. Such a financial distress will lead to the death of the non living entity.

- **Short term Debt**

These are the short term financing instruments which a company uses and it includes bank overdraft, commercial papers, bill of exchange, and loan from commercial finance companies etc. All these liabilities have a maturity less than one year (Arnold, 2008, P.474).

2.1.4 Importance of working capital management

Working capital management is important factor in the management of current assets and current liabilities. A proper management of working capital is required because if a company has too little investment in the working capital then it means that company doesn't have sufficient quantity of materials and account receivables which might lead to loss in production and consequently sales will decrease, furthermore in case of a high demand in the market it will be difficult for the company to react immediately and fulfill the demand. On the other hand if the investment in working capital is too big then a company has to bear the cost of storage of inventory, handling cost and opportunity cost (Arnold, 2008, p.529).

Regardless of how promising a company may be, the inefficient handling of its working capital may not only lead to lack of profitability but even cause its ultimate downfall. On the other hand, if its component is managed well, it may lead to increased profitability in any organization.

In order to control risk and cost of the company the decision about the financing and level of working capital is really important. The level of working capital fluctuates with any fluctuation in its component e.g. if the production of firm is higher but the sale is relatively

lower than level of inventory will increase, on the other hand if sale exceeds the level of production then inventory will decrease. Similarly, the level of cash will increase when companies collect the receivables and its level reduces when it pays its account payables.

In its endeavour to earning a steady amount of profit, the firm has to invest enough funds in current assets for the success of its sales activity. Current assets are needed because sales do not convert into cash instantaneously. There is always an operating cycle or flow, a time lag between production and sales to cash inflow. Efficient working capital management is essential for the success of every organization. It is through sound working capital that an organization generates cash, which eventually results in strong cash flow.

2.1.5 Sources of Working Capital

Horne and Wachowicz (2010) Generally, there are a number of ways by which a firm may endeavour to raise funds to meet the working capital inadequacy caused by its various uses.

Such sources are:

- **Profitable operations**

If operations are profitable, working capital will increase by the amount of net income reported plus all expenses incurred which do not involve the use of cash or working capital items. Depreciation, amortization and any loss on sales of non-current assets are such expenses, because although they have been deducted in the income statement, they do not in fact affect working capital. If they were added to net profit, the amount of working capital generated from operations would be understated.

- **Long- Term financing**

Additional shares, which increase shareholders equity, could be issued and sold, giving rise to increased working capital through the cash collected. Similarly the firm can borrow by issuance of debentures or through long-term loans to enhance its working capital resources.

- **Sale of non- current assets**

Though fairly infrequent, the sale of non-current assets like machines and vehicles is another source of working capital. The total inflow of cash on the sale of non- current assets is shown as a source of working capital.

2.1.6 Determinants of Working Capital

There are no sets of rules or formula to determine the total investment in working capital an analysis of the relevant factors is necessary and should be made. Kumar (2008) the factors which generally influence the working capital requirement of firms, are as follows:

- **Nature and Size of Business**

The working capital requirement of a firm is basically influenced by the nature of its business. Trading financial firms and some manufacturing companies require a large sum of money to be invested in working capital with a nominal amount in non-current assets. In contrast, public utilities have a very limited need for a working capital and have to invest abundantly in non-current assets since they normally supply mainly services and not goods. Thus no funds will be tied up in debtors and stock (inventories). The size of business also has

an important impact on its working capital need size may be measured in terms of the scale of operations. A firm with large scale of operations will need more working capital than the one with a limited scale of operations.

- **The Manufacturing Cycle**

The manufacturing cycle starts with the purchase and use of raw materials and continues with the production of finished goods. The longer the manufacturing cycle the larger will be the firm's working capital requirements. Thus, if there are alternative ways of manufacturing a product, the process with the shortest manufacturing cycle should be chosen.

- **Firms Credit Policy**

The credit policy of the firm influences the level of book debts, which in turn affects the working capital. A liberal credit policy without rating the credit worthiness of the customers and with a high collection period will be detrimental to the firm by increasing the chances of bad debt and subsequently result in liquidity problems. Thus, a firm should be discretionary in granting credit terms to its customers.

- **Availability of Credit to the Financial Institution**

Credit terms granted by creditors also affects working capital needs of the financial institution. If liberal credit terms are available to a financial institution, it will therefore need less working capital. Similarly, a firm which can get bank credit easily on favourable conditions will operate with less working capital than a firm without such facility.

- **Business Fluctuations**

Most firms experience seasonal and cyclical fluctuations in the demand for their products and services. These business variations affect the working capital requirements, especially temporary working capital. When there is an upward swing in the economy, sales will increase. In contrast, the level will fall when sales falls as a result of decline in the economy.

- **Production Policy**

The productivity of the firms is also affected by seasonal fluctuation. The fluctuation may require increased production, which may be expensive for the firm during peak demand period. Also, it may be expensive for the firm to sustain its working force and physical facilities without adequate production and sales during slack periods. A firm may thus follow a policy of steady or constant production, irrespective of the seasonal changes. This results in accumulation of inventories during off season, which ties up working capital and the quick season. In addition, the firm can diversify its production capacities, which can be utilized for manufacturing varied products.

- **Changes in Price Level**

A firm is required to maintain a higher amount of working capital since increased investment will be needed to finance the same level of current assets because of rising price levels. Its effect differs among firms; while the working capital problem of some firms worsens, others may remain unaffected.

- **Profit Level and Appropriation**

Firms differ in their ability to earn profit from operations. The net profit serves as a source of working capital to the extent that it has been earned in cash. To arrive at cash profit, all non-cash items such as depreciation, outstanding expenses and losses written-off in the net profit, have to be adjusted. However, the proportion of net profit that would be available for working capital purposes would depend upon taxation and the dividend and retention policy of the firm.

- **Growth and Expansion Activities**

To sustain expansion on production and sales a firm needs to increase its working capital funds. The critical fact; however is that the needs for increased working capital funds do not follow growth in business activities but precede it.

- **Operation Efficiency**

The optimum utilization of firm resources at minimum cost enhances improvement in its working capital use by reducing pressures on it. Also, it enhances improved profitability on firm's operational efficiency.

2.1.7 Excess and Inadequate Working Capital

Kumar (2008) A firm is required to maintain adequate working capital when carrying out its business operations to avoid waste and inadequacies. Both excessive and inadequate working capital has far-reaching adverse effect on firm's performance. Inadequate working capital is often stated as the cause of financial embarrassment and failure of many firms. It makes it difficult to maintain a sound liquid position and also interrupt sales and production processes. Working capital inadequacy arises from unfortunate circumstances and bad financial management. Its dangers to a successful business operation of a firm would read:

- 1) Non- availability of working capital funds makes it difficult for the firm to undertake most profitable projects.
- 2) It makes the implementation of operating plans and the accomplishment of firms desired profit level difficult.
- 3) It becomes difficult even to meet day-to-day commitment when there is working capital inadequacy and consequently operation inefficiencies set in.
- 4) The returns on investment fall for lack of working capital to efficiently utilize fixed assets.
- 5) The firm would be unable to benefit from attractive credit opportunities because of insufficient working capital.

- 6) When a firm is not in position to honour its short-term obligation as a result of inadequate working capital, the firm loses its reputation and as a result faces high credit terms from creditors. Also its existence may be threatened by insolvency.

While inadequate working capital opens a company to a serious financial trouble and impairs profitability, the importance of adequate working capital to the firm is immense.

The advantages that accrue to a firm whose working capital is adequate include:

- 1) Continuance of solvency and production by meeting bills for material, direct labour and other cost of doing business from day-to-day.
- 2) Good credit rating and steady supplies by prompt payment of bills.
- 3) The earning of a business increases by discount benefits from prompt payment of bills.
- 4) Continuance production is assured and this results in a steady work for employees. This creates high morale and increases efficiency and lower costs.
- 5) Virtual guarantee of emergency loan or extension of credits. Banks are more willing to go along on seasonal loans of the business if adequately financed and has a good credit standing and trade reputation.

Although adequate working capital is essential, an excessive amount of working capital has distinct adverse effect on the efficiency and effectiveness of a business. Chief among these disadvantages are emphasized, in the Encyclopedic dictionary are:

- 1) The rate of return on investment is not high as it could be; excess working capital could be profitably invested to generate some return thereby increasing the firm's over-all profitability.
- 2) Excessive working capital indicates that management is not taking advantage of expanding the business.
- 3) It is difficult to curtail purchase and enforce a policy of economy when surplus money is available. Waste, theft and losses can be encouraged easily as well as acquisition of unnecessary inventories and fixed assets.
- 4) Excessive working capital might cause a firm to neglect, maintain good credit relations with banks, as an assurance of favourable consideration when the need for a loan arises.
- 5) Excessive working capital destroys the control of turnover ratio commonly used in conducting an efficient business. It also destroys all the other guides and signposts used in operating a business.
- 6) It degenerates into managerial inefficiency.

2.1.8 Working Capital Policy

Working capital policy can be best described as a strategy which provides the guideline to manage the current assets and current liabilities in such a way that it reduces the risk of default (Brian, 2009). Working capital policy is mainly focusing on the liquidity of current assets to meet current liabilities. Liquidity is very important because if the level of liquidity is too high then a company has a lot of idle resources and it has to bear the cost of these idle resources but if the liquidity is too low then it will face a lack of resources to meet its current

financial liabilities (Vishnani and Shah, 2007). Current assets are key component of working capital and the working capital also depends on the level of current assets against the level of current liabilities (Afza and Nazir, 2007). On this base the literature of finance classifies working capital policy into three categories (Arnold, 2008, p.535-536).

- Aggressive policy
- Conservative policy
- Defensive policy

2.1.8.1 Aggressive Policy

A company can follow aggressive policy by financing its current assets with short term debt because it gives the low interest rate but the risk associated with short term debt is higher than the long term debt. This approach is very risky because the difference between short term or liquid assets and short term liabilities turns very little. Furthermore few finance managers take even more risk by financing long term asset with short term debts and this approach push the working capital on the negative side. Managers try to enhance the profitability by paying lesser interest rate but this approach can be proved very risky if the short term interest rate fluctuates or the cash inflow is not enough to fulfill the current liabilities (Andrew and Gallagher, 1999, p.427). Such a policy is adopted by the company which is operating in a stable economy and is quite certain about future cash flows. A company with aggressive working capital policy offers short credit period to customers, holds minimal inventory and has a small amount of cash in hand. This policy increases the risk of default because a company might face a lack of resources to meet the short term

liabilities but it also gives a high return as the high return is associated with high risk (Vishnani and Shah, 2007). Some companies want neither to be aggressive by reducing the level of current assets as compared to current liabilities nor to be defensive by increasing the level of current assets as compared to current liabilities.

2.1.8.2 Conservative Policy

In order to balance the risk and return these firms are following the moderate or conservative approach. This approach is a mixture of defensive working capital policy and aggressive working capital policy. In these approach temporary current assets, assets which appear on the balance sheet for short period will be financed by the short term borrowings and long term debts are used to finance fixed assets and permanent current assets. Thus the follower of this approach finds the moderate level of working capital with moderate risk and return (Andrew and Gallagher, 1999, p.429). Moreover this policy not only reduces the risk of default but it also reduces the opportunity cost of additional investment in the current assets.

The level of working capital also depends on the level of sales because sales are the source of revenue for any company. Sales can influence working capital in three possible ways: (Arnold, 2008, p.534:535).

As sales increase, working capital will also increase with the same proportion so, the length of cash conversion cycle remains the same.

As the sales increase, working capital increase in a slower rate.

□□As the sales increase, the level of working capital rises in misappropriate manner i.e. the working capital might raise in a rate more than the rate of increased in the sale.

A company with stable sale or growing sale can adopt the aggressive policy because it has a confidence on its future cash inflows and is confident to pay its short term liabilities at maturity. On the other hand a company with unstable sale or with fluctuation in the sale can't think of adopting the aggressive policy because it is not sure about its future cash inflows. In such a situation adoption of aggressive policy is similar to committing a suicide.

2.1.8.3 Defensive Policy

A company follows defensive policy by using long term debt and equity to finance its fixed assets and major portion of current assets. Resultantly the level of working capital is quite high which means that a company has more liquid or current assets than the current liabilities. This approach reduces the risk by reducing the current liabilities but it also affects profitability because long term debt offers high interest rate which will increase the cost of financing (Andrew and Gallagher, 1999, p.428). It means a company is not willing to take risk and feel it appropriate to keep cash or near cash balances, higher inventories and generous credit terms. Mostly the companies that are operating in an uncertain environment prefer to adopt such a policy because they are not sure about the future prices, demand and short term interest rate. In such a situation it is better to have a high level of current assets e.g. to keep the higher level of inventory in the stock to meet the sudden rise in demand and

to avoid the risk of stoppage in the production. This policy gives a longer cash conversion cycle for the company. Defensive policy provides the shield against the financial distress created by the lack of funds to meet the short term liability. Similarly funds tie up in a business because of generous credit policy of the company also have its opportunity cost. Hence this policy might reduce the profitability and the cost of following this policy might exceed the benefits of the policy (Arnold, 2008, p.530).

2.1.9 Cash Conversion Cycle

It is a time span between the payment for raw material and the receipt from the sale of goods. For a manufacturing company we can define it more precisely, it is a time for which raw material is kept for the processing plus the time taken by the production process plus the time for which finished goods are kept and sold and the time taken by the debtors to pay their liability, minus the maturity period of account payable. By this definition it is quite clear that longer cash conversion cycle required more investment in the current assets. Furthermore good cash conversion cycle is helpful for the organization to pay its obligations at a right time which will enhance the goodwill of a company. On the other hand a company with poor cash conversion cycle will not able to meet its current financial obligations and will face financial distress. Cash conversion cycle is also used as a gauge to measure the aggressiveness of working capital policy. It is believed that longer cash conversion cycle

corresponds to defensive working capital policy and shorter cash conversion cycle corresponds to aggressive working capital policy (Arnold, 2008, p.530:531).

2.1.10 Components of Cash Conversion Cycle

- **Day's inventory held**

Day's inventory held can be defined as the time between the receipt of raw material and delivery of finished goods. It also depends on the policy which a company adopts towards working capital. An aggressive policy of working capital has low inventory level and has few days for which they held inventory.

- **Days account receivables**

The time between the sale and the receipt of payment is known as trade credit period or days account receivables. It is believed that longer period of collection of account receivables or longer credit period offered by the company results into higher sales, and more sales bring more profit in the business. So, there could exist a relationship between the number of days account receivables and profitability of the firm. On the other hand large time span between the sale and receipt of account receivables requires higher investment in current assets which is considered as an idle resource and have its own opportunity cost. Furthermore cash generated by the sale is used to pay the operating expenses of the company. So in this situation if the credit period offers by the company to its customers is larger than the credit

period offered by its creditors then there will be a financial distress which might lead to bankruptcy (Brealey and Myers, 2006, p.814-815).

While deciding on the collection period of account receivables finance managers have to consider the following things (Brealey and Myers, 2006, p.814-815).

- **Days Account payables**

Account payables are generated when you buy the product and agree to pay your liability on a specify time in the future. It is a time between the purchase of goods and its payment (Arnold, 2008, p.531). If the firm is unable to pay its account payables on time then it signals to the market that firm have some financial problem and it might go bankrupt resultantly its goodwill will be spoiled and the value of its shares will go down. So, it is necessary for the firm to manage the day's account payables in a way that it doesn't create any trouble for it. Shorter duration of day's account payables can be beneficial for an organization as it has some discount associated with it but at the same time it will force a company to reduce the collection period which might cause the reduction of sale. So, companies have to be very careful while deciding on the duration of day's account payables. For the researcher it is better for a company to have larger duration of day's accounts payable than the collection period.

2.1.11 Firm Profitability

Profitability is a measure of profit generated from the business and is measured in percentage terms e.g. percentage of sales, percentage of investments, percentage of assets. High percentage of profitability plays a vital role to bring external finance in the business because creditors, investors and suppliers do not hesitate to invest their money in such a company (Gitman, 2002, p.61).

2.1.12 Measurement of Firm Profitability

There are several measures of profitability which a company can use. Few measures of profitability are discussed here.

Return on Equity (ROE)

It measures the earnings of the company against the investment of common stockholders.

Shareholders always want the higher value of ROE. It is calculated in the following way (Gitman, 2002, p.65).

$$ROE = \frac{\text{(Earnings available for common stockholders)}}{CSE} \times 100$$

Where,

CSE = Common stock equity

Net Profit Margin

It calculates the percentage of each sale cedi remains after deducting interest, dividend, taxes, expenses and costs. In other words it calculates the percentage of profit a company is earning against its per cedi sale. Higher value of return on sale shows the better performance (Gitman, 2002, p.64).

$$\text{NPM} = \frac{(\text{Earnings available for common stakeholder}) \times 100}{\text{N.S}}$$

Where,

N.S = Net sales

Return on Total Asset (ROA)

This ratio explains how efficient a company is to utilize its available assets to generate profit. It calculates the percentage of profit a company is earning against per cedi of assets. The higher value of ROA shows the better performance (Gitman, 2002, p.65).

$$\text{R.O.A} = \frac{(\text{Earnings available for common stockholders}) \times 100}{\text{T.A}}$$

Where,

T.A = Total Assets

Gross operation profit

This ratio explains how efficient a company is to utilize its operating assets. This ratio calculates the percentage of profit earned against the operating assets of the company (Lazaridis and Tryfonidiens, 2006).

$$\text{Gross operating profit} = \frac{(\text{Sales} - \text{COGS})}{\text{Total assets} - \text{Financial assets}}$$

Other variables that are theoretically postulated to affect firm's profitability performance were also considered as control variables in the model. These include the following:

- **Size**

Economies of scale are assumed to have positive relationship with the firm's size. Size captures economies of scale and it is believed that as a company becomes large, it is better place to reap economies of scale. However, the impact of firm size on profitability can also be negative. Any positive influence on profits from economies of scale may be partially offset by greater ability to diversify assets resulting in a lower risk and a lower required return in line with the portfolio theory (Evanoff and Fortier, 1988). Civelek and AL-Alami (1991) have established this contrary view. Another explanation is that smaller firms are easy to manage in terms of control and coordination. We measured the size (SIZE) as the logarithm of assets.

- **Sales Growth**

This ratio is fairly straightforward and is the increase or decrease of the annual sales measured as a percentage. In this study a positive effect from sales growth on the performance measure is assumed. Control variable is introduced as the growth in firm sales.

$$\frac{Sales1 - Sales0}{Sales0}$$

Sales1 = Current Sales

Sales0 = Previous Sales

- **Debt**

This indicator is measured by the relationship of long term debt to total assets and is a proxy for leverage. It is assumed that when external funds are borrowed (e.g. from banks) at a fixed

rate, they can be invested in the company and gain a higher interest than the interest paid to the bank. The difference is a net profit for the shareholders and boosts therefore the Return on Equity.

$$\frac{\textit{Total Debt}}{\textit{Total Asset}}$$

KNUST

2.1.13 Liquidity versus Profitability

Creditors of the company always want the company to keep the level of short term assets higher than the level of short term liabilities; this is because they want to secure their money. If current assets are in excess to current liabilities then the creditors will be in a comfortable situation. On the other hand managers of the company don't think in the same way, obviously each and every manager want to pay the mature liabilities but they also know that excess of current assets might be costly and idle resource which will not produce any return e.g. having high level of inventory will raise warehouse expense So, rather than keeping excessive current assets (cash, inventory, account receivable) they want to keep the optimal level of current assets, a level which is enough to fulfill the current liabilities, and want to invest the excessive amount to earn some return. Now managers have to make a choice between two extreme positions, either they will choose the long term investments, investments in non current asset such as subsidiaries, with high profitability i.e. high return and low liquidity or short term investment with low profitability i.e. low return and high liquidity. Creditors of the company want managers to invest in short term assets because they are easy to liquidate but it reduces the profitability because of low interest rate. On the other

hand if the managers prefer the long term investment to enhance the profitability than in case of default lenders or creditors have to wait longer and bear some expense to sell these assets because the liquidity of long term investment is low. In reality, none of the managers choose any of these two extremes instead they want to have a balance between profitability and liquidity which will fulfill their need of liquidity and gives required level of profitability (Andrew and Gallagher, 1999, p.425).

2.1.14 Financial Assets

Financial assets are intangible assets and can be converted into cash easily. It includes cash, a right under a contract to receive other financial assets or cash from the other enterprise, a right under a contract to exchange financial instruments under favorable conditions with another enterprise, equity of other company and financial instruments (Elliot, 2006, p.172). Financial instruments such as derivatives are part of financial assets under a favorable condition, in an unfavorable condition it might turn into financial liability. Financial assets enhance the profitability as they bring some return in the form of dividend or provide the shield against the risk of certain kind (exchange rate risk, price risk etc). Higher level of financial assets means that companies have higher level of liquidity. If an uncertain event disturbed the cash flow of the company even then company doesn't need to borrow money on unfavorable terms to pay its liabilities rather it can sell the financial assets.

2.1.15 Financial Debt

These are the obligation of the company under a contract to deliver cash, financial assets or exchange of financial instrument under an unfavorable condition. All the loan of the company also falls in this category. Financial obligations can be settled with the payment of cash, with the financial assets of the company or share equity of the company (Elliot, 2006, p.172). Financial liabilities also contribute to the profitability as it reduces the cost of issuing share. Timely payment of financial obligations also earns goodwill for the company.

2.2 EMPIRICAL LITERATURE

A number of studies have been undertaken on the issue of determinants of profitability in different countries. These empirical studies show the relationship between profitability and its determinants, which have been carried out worldwide. The literature broadly provides us with the variables that determine a company's profitability which are equally popular among researchers. The following factors have been found to affect the overall level of firm profitability: Market share, Firm Size, Firm Ownership, Firm Age, Import Competition, Export Intensity, Advertising Intensity, Depreciation Rate, working capital policy etc. The discussion of the previous literature provides an explanation of these explanatory variables that are included in the analysis of this paper. The findings of the earlier literature are reflected in the choice of independent variables to our analysis.

Subramaniam and Papola (1971) studied the relationship between profitability and growth of firms in Indian chemical industry during the period 1962-1969 using panel data of 27 companies quoted in stock exchange. They found that the most of the firms want to grow in

an expanding market with differing intensities and that those who have ability aided by profit continued to grow faster.

Hurdle (1974) in 'Leverage, Risk, Market Structure and Profitability', developed theoretical model relating to leverage, market structure, risk and profitability and tested the model using cross-sectional data on 220 United States manufacturing firms and 85 industries data covering the 1960's. He used 3 simultaneous equations to test the hypothesis of his study. He found that while firms with market power do have lower risk, they do not have higher debt than low market-power firms. He further argued that higher profit firms earned this because of market structure and not through capital structure.

Agarwal (1978) in his study entitled 'Size Profitability and Growth of some Manufacturing Industries' highlighted the relationship between profitability and firm size expressed for 7 Indian manufacturing industries, viz. cotton spinning and weaving, cotton ginning, jute textiles, paper and pulp, sugar and aluminum for the period 1962-1972. A positive relationship between firm size and profitability was observed in cotton spinning industry, jute textile industry, sugar and brewing industry and aluminum industry, while in case of cement and cotton spinning and ginning industry no such relationship was observed.

McConnell and Servaes (1990) investigated the cross-sectional relation between profitability and firms' ownership for a sample of 1,173 firms in 1976 and for a sample of 1,093 firms in 1986 that are listed on either the New York Stock Exchange or the American Stock Exchange. For both samples, they found a significant curvilinear relation between firm

profitability and the ownership structure. Profit first increases, then decreases, as the shares become concentrated in the hands of managers and members of the board of directors.

In a recent multi-country study, Boulhol (2005) examined the determinants of profitability for OECD countries in 1970-2003. In particular, the main objective of his paper was to quantify the pro-competitive effects of international trade on profitability. According to his estimates, one percentage point increase in the import penetration lowers the profit, price-cost margin, by around 0.005, while on average; imports have contributed to a 0.042 decrease in profitability over the sample period.

The first study analyzing the causal relationship between exporting and productivity at the firm level in literature was by (Bernard and Jensen (1999) on the United States economy. Using a variety of econometric methods and data from several countries, Bernard and Jensen (1999) among others found evidence in favour of self selection and against the learning-by-exporting hypothesis. Only the most profitable firms have a sufficient cost advantage to overcome transportation costs and compete internationally. Their study further found that exporters are more profitable than non-exporters, not because there are any benefits associated with export activities, but they are simply more profitable from the outset. Only a few studies—Kraay (1999) for China and Bigsten et al.(2004) for sub-Saharan Africa found evidence to the contrary. Aw et al. (2000) found evidence supporting learning-by-exporting in Taiwan, but not in South Korea.

Neumann, Bobel and Haid (1979) in their study entitled 'Profitability, Risk and Market Structure in West German Industries' explained mean rates of return of the period from 1965 to 1973 of 334 West German joint-stock companies by risk and market structure. The results suggested that investors were risk averters and that risk bearing was accordingly compensated by a higher rate of return. Degree of concentration and product differentiation were positively related to profitability, while export and import ratio exerted an adverse impact on profitability. As regards to size and profitability, smaller firms tended to be more flexible, tended to take chances of growth more easily than the bigger ones. So there was inverse relationship between growth and profitability.

Vijayakumar (2002), in 'Determinants of Profitability – A Firm Level Study of the Sugar Industry of Tamil Nadu', delved into the various determinants of profitability, namely; growth rate of sales, vertical integration and leverage. Apart from these three variables, other explanatory variables such as current ratio, operating expenses to sales ratio and inventory turnover ratio were employed. Econometric models were used to test the various hypotheses relating profitability with other variables. The findings from the study revealed that efficiency in inventory management and current assets are important determinants of profitability.

The objective of the study is to determine the effect of working capital management on firm profitability in the Ghanaian Manufacturing industries during the period 2005-2009. The necessary data related to profitability and other variables used in this study were collected

mostly from the annual reports of the selected manufacturing firms listed on the Ghana Stock Exchange.

García-Teruel, P. J and Martínez-Solan, P. (2008) investigated the effects of working capital management on the profitability of small and medium-sized Spanish firms. A panel data comprising 8,872 SMEs covering the period 1996-2002 was used. The findings, which are robust to the presence of endogeneity, demonstrated that profitability can be increased by reducing the number of days accounts receivable and inventories. Equally, shortening the cash conversion cycle also improves the firm's profitability

Padachi (2006) examined the trends in working capital management and its impact on firms' performance. Using return on assets as a dependent variable, and employing data on 58 small manufacturing firms for the period 1998-2003, the results from the panel data analysis showed that high investment in inventories, and receivables is associated with lower profitability. The study further revealed an increasing trend in the short-term component of working capital financing.

Demir (2008) using bi-annual data from 1993 to 2003 for 172 manufacturing firms in Turkey, explored the impacts of macroeconomic uncertainty, country risk and external shocks on profitability of real sector firms after controlling for the share of financial investments in total assets. Based on a portfolio choice model the study argued that in order to sustain profit margins in the face of higher risks, uncertainty and competition real sector firms should increasingly invest on liquid financial assets rather than long term fixed assets.

The empirical findings based on dynamic panel estimation techniques confirm that increasing uncertainty, country risk, real interest rates and capital flow volatility have a significantly negative effect on manufacturing firm profitability. In contrast, increasing short-term financial investments are found to be reducing the negative effects of risk, volatility and higher interest rates at a significant level. Overall, firms appeared to be using short-term investments as a way of hedging against risks and uncertainties in the market.

2.2.1 Working Capital Practice in United States

In order to discover the relation between cash conversion cycle and profitability Shin and Soenen (1998) focused on listed American firms for the time 1975-1994 to find out the relationship between cash conversion cycle and firms profitability. The result of the study shows that there exists strong negative relationship between the two variables of study, so profitability can be increased by the reduction in cash conversion cycle.

Lamberson (1995) tries to find out the impact of change in economic activity on the working capital management policy. He studied the 50 small firms of United States over the period of twelve years (1980- 1991). He concludes that the firms are consistent with their investment in working capital and this investment did not increase during the period of economic expansion so, there is a very little impact on WC practice of small firms by the change in economic activities.

Jose and Lancaster (1996) analyzed 2,718 United States firms from different sectors over the period of 18 years (1974-1993) in order to establish a relationship between aggressive working capital policy and profitability. The result shows the inverse relationship between

ROA and WCMP. They also found that the size of the company have nothing to do with such a relationship which contradicts Uyar (2009).

Weinraub and Visscher (1998) analyzed the quarterly data of 216 firms from ten different industries to find out practice of different industries towards the working capital. He finds that different industries have different approach towards WCP and there is inverse relationship between liability and asset management. According to him conservative working capital financial management always balanced the effect of relative aggressive working capital asset management.

Ganesan (2007) studied the impact of working capital management policy on the profitability of telecommunication industry of United States. He studied 349 companies over the period of six years (2001-2007). Correlation analysis, regression analysis and ANOVA analysis was conducted to check the impact on profitability by the WCMP, the result shows the weak negative relation between profitability and WCMP. They find that the companies have poor approach to manage the components of working capital.

2.2.2 Working Capital Practice in European Companies

Deloof (2003) while studying Belgian firms for the period 1992-1996 finds that days Account payable, days Account receivable and stock have negative relationship with profitability. According to him firms can create value by decreasing the amount invested in the current asset to a reasonable level and by shortening their number of days Account receivable and number of day's inventory held

Lazaridis and Tryfonidis (2006) focused on Athens stock exchange and study 131 listed companies over the period of 2001-2004 to investigate the impact of efficient working capital management on profitability. They used gross operating profit as a measure of profitability. Unlike the previous researches they used cash conversion cycle, size of the company, fixed financial assets and financial debt ratio as independent variable. The result was similar to the previous studies in a way that firm's profitability and cash conversion cycle are negatively correlated.

Teruel and Solano (2007) study the trend of working capital of Small and Medium enterprises of Spain. For this purpose they collect the data for 8872 firms for the period 1996-2002. They used ROA as a dependent variable and number of days Account receivable, number of days Accounts payable and number of day's inventory held and cash conversion cycle as independent variable. Furthermore size of the firm, growth of sales is used as control variable. They find inverse relationship between number of days Account receivable and number of day's inventory held with the profitability of small to medium enterprise. This means that if a company has large inventory and large collection period then it will reduce the profitability. They also found that short cash conversion cycle will enhance profitability. Thus this study indirectly indicates that aggressive working capital policy can enhance the profitability.

Uyar (2009) tried to establish a relationship between cash conversion cycle, profitability and size of the firm. The focused was on listed companies on Istanbul Stock exchange, he collected the data for 166 companies from seven different industries for the period of one year (2007).

He used total asset and net sale as a variable to measure the size and ROE as a variable to measure profitability. ANOVA and Pearson correlation was run to find out the association of cash conversion cycle with size of the company and cash conversion cycle with profitability. Not surprisingly there exists a negative relationship between cash conversion cycle and size of the firm, and cash conversion cycle and profitability. Samiloglu and Demirgunes (2008) also considered Turkish firms for their study. Not only their study validates the findings of Uyar, they also found that profitability and growth in sales moves in a direct relationship with each other.

2.2.3 Working Capital Practice in Developing Asian countries

Chiou and Cheng (2006) focused on Taiwan to find out the factors which determine the working capital and can affect the management of working capital. They use the quarterly data for the period 1998-2004. They conclude that not only internal factor affect the decision about the working capital management but also there are few outside factors which can directly affect it. These factors are still to be addressed in a proper way. Inside factors have more influence on this decision and they include debt ratio, size of the company, profitability, growth and operating cash flow.

Rehman and Nasr (2007) took the sample of 94 companies among the companies which are listed on Karachi stock exchange over the period of 6 years (1999-2004) to study the trend of Pakistani firms towards the working capital and impact of their practice on the profit. They took size of the company, current ratio, debt ratio, net operating profit, cash conversion cycle and component of cash conversion cycle as variables. As a control variable they use financial asset to total asset ratio. Regression analysis and Pearson's correlation techniques were used for the purpose of analysis. They found that cash makes the major part of the current asset of

Pakistani firms. Furthermore they also found the negative relationship between profitability and components of cash conversion cycle.

According to them shareholders wealth can be increased by reducing the length of cash conversion cycle.

Vishnani and Shah (2007) investigate the impact on profitability by different working capital policy of 23 listed companies of India in the consumer electronics industry. For their study they focused the period of 10 years (1995-2005). They try to find the relationship between profitability and liquidity i.e. ROCE and current ratio. They find that profitability and liquidity have positive relationship between them but this relationship is very weak because 9 out of 23 companies show negative relationship so, there is no significant relationship exists between liquidity and profitability. They also found the inverse relationship between collection period, holding period and ROCE.

Nazir and Talat (2008) study the trend in Pakistani firms towards the working capital policy by using the panel data for 204 non financial firms listed in Karachi stock exchange the period 1998-2005. They found that value can be created by following the conservative approach. Furthermore investors prefer those firms who have aggressive approach towards current liabilities management. In addition to this they explain that manager can increase the shareholder's wealth by following the aggressive approach but they can't raise the accounting performance with the same approach

In another study Talat and Nazir (2008) studied 208 listed companies on Karachi stock exchange to find out the relationship among the aggressive and conservative policy of working capital. The result contradicts the result of the other studies discussed before.

They found that there exist no considerable connection between the aggressiveness of working capital policy and profitability

2.2.4 Working Capital Practice in Sub- Saharan Africa

Specific research studies exclusively on the impact of working capital management on corporate profitability in developing countries, especially in poor Sub Saharan African (SSA) remained altogether an ignored area of empirical research. These were argued had serious shortcomings of existing literature and the current study fills the gap for Nigerian company.

Existing literature characterized working capital management as an area largely lacking in theoretical perspective (Van Home, 1977). More specifically, the limited general theory which does pertain to working capital management (like capital budgeting) emanates from the finance literature and focuses on the relationship between risk and profitability (Smith, 1980).

Beaumont and Begemann (1997) emphasized that the major concepts of the working capital management are profitability and liquidity. They point out that there exists a trade-off between profitability and liquidity. Thus, the relationship between profitability and working capital helps understand the relationship between profitability and liquidity, the dual goals written on the working capital management. Although, there seems to be that the scholars who have written on this relationship have not completely synthesized their various hunches into a theory, there is noticeable consistency in the use of few guiding concepts in working capital management literature. These concepts constitute what is here labeled the theoretical framework-after all; a theory is a supposedly tenable explanation about a relationship.

In spite of the touted impact efficient working capital management may have on business survival and growth, not much has been done in the area of the provision of empirical evidence in support of the claims of working capital management on profitability performance of Nigeria companies. Given the paucity of empirical studies, it is hoped that this study will fill a gap and provide useful support for understanding the determinants of corporate performance in Ghana.

However, both the uses and sources of working capital will be reflected in the balance sheets as a decline or increase in working capital or as a balance sheet changes. Also, they will be reflected in the statement of sources and application of funds, which will indicate whether or not there is an increase in working capital position.

2.2.5 Conclusion

This chapter provided a review of relevant literature on the determinants of profitability. The first section dealt into the theoretical literature focusing on the relationship between working capital variables and profitability. In the second section of this chapter a broad review of empirical literature was conducted on the factors which influence firm profitability.

KNUST

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter provided the analytical framework for the study. The rationale is to place the study in its right perspective with regards to the necessary tools for estimation. Again, it will aid the presentation of results and the provision of appropriate policy recommendations for the study. It begins with a description of the theoretical framework adopted for the study and the econometric technique to be employed in executing it. Later, the validity, reliability and definitions (description) of the various variables employed were delved into. Finally, concluding remarks are provided.

3.1 Research Design

The primary aim of this research was to investigate the effect of working capital management on firm profitability. This was achieved by developing a similar empirical framework first

used by Shin and Soenen (1998). The study focused on some of the listed manufacturing firms on the Ghana Stock Exchange. Here, the researcher used 10 manufacturing firms listed on Ghana Stock Exchange for a period of five years from 2005 to 2009. Annual reports of those firms were used as the main source of data for the analysis.

3.2 Description of the Sample

The sampling frame of this study consists of the Ghanaian manufacturing companies that are listed on the Ghana Stock Exchange.

The intention was not to concentrate primarily on listed companies, but small and medium size manufacturing firms. The rationale for narrowing down the population to cover only listed companies was the easy access to yearly published financial reports that unlisted companies could not offer.

3.3 Sampling Method

In order to make conclusions of sample frame and statistical inferences to be valid, a sample was selected as a representative of the population. The population of interest consisted of the companies listed on the Ghana Stock Exchange with the aim of studying the whole Ghanaian manufacturing population. The idea was to get 15 companies in order to make generalizations and to have statistically significant results. Due to lack of complete data on some manufacturing firms, the figure was reduced to 10.

Simple random sampling method was chosen since statistical analysis was conducted and in order to have generalisability for the results it is necessary to have such a sampling method.

The research technique involves primarily the procuring and analyzing of financial statements of the organizations concerned covering the period (2005-2009). The study undertakes the issue of identifying key variables that influence working capital management of firms. Choice of the variables was influenced by the previous studies on working capital management.

KNUST

3.4 Validity of data

Validity means the findings of a research are real. For example, the research conducted to explain the relationship between two variables will show the same relationship as it is in reality and there exist no fictitious numbers to make the result attractive (Saunders & Lewis, 2000, pp.101-102) . The data which were used for the analysis was from the financial reports provided by the companies in their annual reports, representing their financial situations, and there are no factious figures to make the result more interesting. It is explaining the true and real relationship between working capital management and profitability of listed Ghanaian manufacturing firms.

3.5 Reliability of data

Reliability means that the result will be the same even if another researcher will carry out the research on a different occasion. Furthermore the research should not be subject bias, observer bias and it should not have any subject error (Saunders & Lewis, 2000, pp.100-101).

All the data was gathered from the audited financial reports of the companies and the analysis was conducted using Stata 10.0 software. This analysis and data are neither subject biased nor observer biased. It is also not possible to change the values of different accounts in financial statements. Thus if the research will be repeated by someone else then it will give the same result.

KNUST

3.6 Model Specification

From the literature review, a number of working capital variables have been hypothesized to affect firm profitability. In order to examine the effect of working capital management on firm profitability, the following function is specified by the study;

$$ROA = f(WC, CR, GEAR, SIZE) \quad 1$$

Where WC comprises; the number of days account receivables (AR), the number of days account payable (AP), the number of days of inventory (INV) and cash conversion cycle (CCC). The current ratio (CR), leverage (GEAR) and firm size (SIZE) are the control variables of the study. Equation (1) expresses the Return on Assets (ROA) as a function of the number of days of account receivables, the number of days of account payables, the number of days of inventory, cash conversion cycle and control variables. To assess the relationship between working capital management and profitability, each of the four working

capital variables were used together with the three controls as explanatory variables while return on assets as the dependent variable. This result in the following equation below:

$$ROA_{it} = \beta_0 + \beta_1 WC_{it} + \beta_2 CR_{it} + \beta_3 GEAR_{it} + \beta_4 SIZE_{it} + \eta_i + \varepsilon_t \quad 2$$

Where WC = AR, AP, INV and CCC

From the equation (2), $i = 1, 2 \dots 10$, $t = 2005, 2006, 2007, 2008, 2009$. η_i is unobservable heterogeneity (individual effect) which is specific for each firm and ε_t is the error term. To

Table 3.1 Data Description

Dependent Variable	Description	Measurement
ROA	Return on assets	Net Income/Total assets
Independent Variables		

estimate the above equations the study relied on the multivariable regression technique.

It was expected that, AR, AP, INV and GEAR will have a negative effect on firm profitability while CR and SIZE is expected affect profitability negatively

3.7 Definition and Measurement of Variables

In this section, the study presents the variables of the study and provides an explanation

AR	Number of days account receivable	$365 \times [\text{Account receivable}/\text{Sales}]$
AP	Number of days account payable	$365 \times [\text{Account payable}/\text{Purchases}]$
INV	Number of days of Inventory	$365 \times [\text{Inventories}/\text{Purchases}]$
CCC	Cash conversion cycle	$\text{AR} + \text{INV} - \text{AP}$
Control Variables		
CR	Current ratio	Current asset/Current Liabilities
GEAR	Leverage	Debt/Equity
SIZE	Logarithm of assets	$\text{Log}(\text{Sales})$

Source: Author's own notes, 2011
of how they are measured.

3.7.1 Return on Assets (ROA)

The study employed return on assets (ROA) as the dependent variable. ROA was a better measure since it relates the profitability of the business to the asset base. There are many ways of managing return on assets but, in principle, key levers are, of course, profit increase and assets reduction. The latter has become more important to many businesses as the former becomes more elusive. ROA is measured by dividing net income by total assets.

3.7.2 Average collection Period (AR)

This symbolizes the average number of days it takes the company to gather payments from customers. It is calculated by dividing account receivable by sales and multiplying the results by 365(number of days in a year).

3.7.3 Average Payment Period

This also measures how long it takes to pay company's suppliers. It is calculated by dividing accounts payable by purchases and multiplying the result by 365.

3.7.4 Inventory turnover in days (INV)

This is used as an independent variable and it is calculated by dividing inventory by cost of goods sold and multiplying the result by 365.

3.7.5 Cash Conversion Period

The Cash Conversion Cycle (CCC) is used as a comprehensive measure of working capital as it shows the time lag between expenditure for the purchases of raw materials and the collection of sales of finished goods. The longer the cycle, the larger the funds blocked in working capital. Cash conversion cycle is measured by adding the number of days of account receivables and the number of days of inventory turnover and deducting the number of days of accounts payable.

3.7.6 Current Ratio

It is another control variable the measures liquidity and it is calculated by dividing current assets by current liabilities.

3.7.7 Leverage (GEAR)

Gearing is a measure of financial leverage, demonstrating the degree to which a firm's activities are funded by owner's funds versus creditor's funds. It is calculated using total debt to total equity.

3.7.8 Firm Size (SIZE)

It is measured by taking the natural logarithm of total sales for the selected companies.

3.8 Data and Sample

The data for the study is basically secondary in nature and was collected from the audited financial reports of listed companies published in the Ghana Stock Exchange Fact book, 2010. In all, data was collected on ten (10) listed manufacturing firms by studying their annual financial reports. The data spans the period 2005-2009 giving a total of 50 data points.

3.9 Data Analysis

The study relied on Pearson's correlation and multivariate regression technique to analyze the relationship between working capital management and profitability. Stata 10.0 was the main software used to estimate the results.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF RESULTS

4.0 Introduction

In this chapter, the findings from the study are presented and discussed. The results will be analyzed under four main sections. The first section deals with the description of the variables of the study. In the second section the study explores the descriptive statistics of the variables of the study. This is followed by the analysis of the correlation between the variables in section three. The final section of this chapter presents the results of the regression of profitability on working capital variables.

4.1 Data Description

The study employs annual time series data of 10 manufacturing firms listed on the Ghana Stock Exchange to analyze the relationship between working capital management and firm profitability. The study uses return on assets (ROA) as the dependent variables since it is a relatively good indicator for profitability and the most common measure of profitability used by several studies. Four working capital variables, number of days account receivables (AR), number of days account payable (AP), number of days of inventory and cash conversion cycle were used as independent variables. Besides current ratio (CR), leverage (GEAR) and firm size measured by natural logarithm of sales were employed as control variables. The description and measurement of the variables are presented in Table 4.1.

4.2 Descriptive Statistics

The summary of descriptive statistics of the variables is presented in Table 4.2. Return on total assets is on average 7.04 % with a standard deviation of 0.097. The maximum value of ROA is 29.65% which is relatively high but a minimum value -16.26 was recorded. On average, firms collect their receivables after 66 days while they take on average 135 days to pay suppliers. However, one of the manufacturing firms was able to collect its receivables after 21 days which was very impressive while another firm could only pay its suppliers after 532 days. On average, the manufacturing firms maintain inventories for 104 days. The average cash conversion cycle (CCC) is 35 days, implying that the manufacturing firms turnover their stocks on an average of 10.4 times a year. The mean value of the current ratio

(CR) is 1.6 which implies that the firms have more than enough current assets that can easily be converted to cash to repay current liabilities. Thus, the manufacturing firms for the study on average have good liquidity positions. On average the firms for the study finance their activities using debt and equity in almost the same proportion but debt use is slightly higher. The mean value of the variable measuring firm size is 4.4.

Table 4.1 Descriptive Statistics of the Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
ROA	0.0704	0.0977	-0.1626	0.2965
AR	65.9754	44.3009	4.8501	184.6982
AP	135.3870	101.5594	21.1403	531.9410
INV	104.0381	73.9559	27.1185	365.0000
CCC	34.6265	101.0897	-293.9238	324.9999
CR	1.6207	1.7246	0.3527	9.8065
GEAR	1.1222	1.9758	0.0000	8.9589
SIZE	4.3889	0.5876	3.1670	5.3031

Source: Estimated from Stata 10.0

4.3 Correlation Analysis

In this section the results of the correlation between the variables of the study are presented. Of particular interest is the correlation between ROA and the independent variables which provides preliminary evidence of the relationship between the variables.

Table 4.3 presents Pearson correlation coefficients for the variables used to assess the impact of working capital management on profitability, measured by return on total assets. ROA is significantly negatively correlated with AR, AP, and INV and positively correlated with cash conversion cycle. For the control variables, ROA is positively correlated with current ratio (CR) and firm size, and negatively correlated with leverage (GEAR). The results from the correlation coefficient provide evidence that reduction in the number of days accounts

receivables (AR), number of days account payable (AP) and numbers of days of inventory leads to increase firm profitability. Increase in cash conversion cycle is also expected to lead to a rise in firm profitability.

Table 4.2 Correlation matrix of the Variables

Variable	ROA	AR	AP	INV	CCC	CR	GEAR	SIZE
ROA	1							
AR	-0.4627	1						
AP	-0.4669	0.3875	1					
INV	-0.0834	0.2503	0.3781	1				
CCC	0.2053	0.232	-0.5582	0.4614	1			
CR	0.4232	0.1243	-0.382	0.1058	0.5156	1		
GEAR	-0.2895	0.2305	0.0204	0.0474	0.1152	-0.1759	1	
SIZE	0.3938	-0.2977	-0.0446	-0.0213	-0.1012	-0.0815	-0.3157	1

Source: Estimated from Stata 10.0

However, the results from the Pearson correlation coefficients must be analyzed with caution because it does not take into consideration the effect of other explanatory variables. Thus, a multivariable regression model is relied upon to estimate the four models put forward in chapter three. The pooled OLS regression model is adopted to estimate the four models stated in the previous chapter.

4.4 Multivariable Regression Analysis

The results from Table 4.2 indicate that the signs of all the variables conform to a priori expectation. The number of days of account receivable and the number of days of account payable are found to be negative and statistically significant at 1% level as indicated by the t-statistic of -3.97 and -2.78 respectively. However, the number of days of inventory and the cash conversion cycle are insignificant (t-statistic value of -1.01 and 0.29 for INV and CCC respectively), despite the fact that they are correctly signed. This implies that the number of

days of inventory and the cash conversion cycle have influence on firm profitability. The findings show that 1% increase in the number of days account receivable and the number of days account payable will lead to 0.096% and 0.032% decrease in profitability respectively. For the control variables, the current ratio and firm size are statistically significant at 1% level for all the four models except for model II where current ratio is statistically significant at 5% level (see Table 4.3). The results show that a 1% rise in the current ratio will lead to an increase in profitability by 2.837%, 1.739%, 2.580% and 2.370% in model I, II, III and IV respectively. Furthermore a 1% rise in firm size will lead to 5.053%, 6.129%, 6.723% and 6.693% increase in profitability in mode I, II, III and IV respectively.

Table 4.3 Regressions of Profitability on Working Capital Variables

Dependent variable ROA	Model I	Model II	Model III	Model IV
AR	-0.00096* (-3.97)			
AP		-0.00032* (-2.78)		
INV			-0.00016 (-1.01)	
CCC				0.00004 (0.29)
CR	0.02837* (4.74)	0.01739** (2.51)	0.02580* (3.76)	0.02370* (2.89)
GEAR	-0.00028 (-0.05)	-0.00556 (-0.95)	-0.00376 (-0.60)	-0.00463 (-0.71)
SIZE	0.05053* (2.73)	0.06129* (3.15)	0.06723* (3.24)	0.06693* (3.20)
_cons	-1.34040 (-1.49)	-0.17748*** (-1.87)	-0.24589* (-2.52)	-2.57963 (0.01)

Adjusted R2	0.49	0.41	0.33	0.32
-------------	------	------	------	------

. *,** and *** denotes 1%, 5% and 10% significance level respectively.

The figures in parenthesis represent t-statistic.

Source: Estimated from Stata 10.0

4.4.1 Discussion of the results

The findings corroborated the claim that return on assets is reduced by lengthening the number of days of accounts receivable and the number of days accounts payable. This finding is consistent with the result found by Delof (2003) for large Belgian firms, emphasizing the importance of working capital management to the firm. Relaxing the deadline for payment of debt by customers, although may lead to a rise sales, it affects profitability negatively. Besides, longer days of account receivables is an indication that the firm is unable to collect its debts on time, this has the tendency to lead to cash flow problems as the firm may not have enough cash to settle its short term debt obligations. Consequently, manufacturing firms which are unable to manage their cash flows efficiently may experience liquidity problem which may eventually affect profitability.

The negative relationship between profitability and the number of days accounts receivable could also be explained by the tendency of less profitable firms to grant longer payment deadlines to customers as an incentive to increase patronage.

The negative relationship found between the number of days of account could be attributed to the fact manufacturing firms who takes longer periods to pay their debt may be considered as less creditworthy by suppliers and as such in periods where there are supply challenges, less

creditworthy firm may find it difficult to obtain regular supply of raw materials. When this happens, production may be affected culminating in declining profit levels.

As stated above, all the control variables of the study for the four models are statistically significant at 1% and 5% level except leverage. The insignificant coefficient for the leverage variable may be explained by the fact that the amount of debt used by the firm does not differ much from the use of equity in the selected manufacturing firms. The current ratio, which is the conventional measure of liquidity, is significant and positively related to profitability. The finding is similar to the one found by Vishnani and Shah (2007) for India. However, the relationship between liquidity and profitability is stronger in this study than the one found by Vishnani and Shah (2007). The study also revealed that there is a positive relationship between profitability and firm size. This is in line with the literature that large firms may enjoy certain advantages such as economics of scale in production to due to declining average variable cost. Large firms may also have increased sales levels and more competitive than smaller firms which place them in a position to be more profitable.

The findings from the study were expected to assist managers in identifying areas where they might improve the financial performance of their operation. The results have provided owner/ managers with information regarding the basic financial management practices used by their peers in the manufacturing industry and their peers attitudes toward these practices. The working capital needs of an organization change over time as does its internal cash generation rate. As such, the small to medium firms should ensure good synchronization of its assets and liabilities.

This would also assist policy-makers to identify the requirements of, and specific problems faced by small and medium firms in Ghana, especially as more emphasis is placed on the sector by the government. This study has come at an opportune time where the Ghanaian government is deploying resources to help the small to medium enterprise sector so that the latter can positively contribute to the Ghanaian economy.

4.5 Conclusion

The chapter presented and discussed the main findings from the study. This was done using on descriptive statistics, Pearson's correlation analysis and multivariable regression. The results from the study indicated a negative relationship between profitability and, the number of days receivables and the number of days account payable. However, the study found no relationship between the number of days of inventory and the cash conversion period and profitability for the selected manufacturing firms in Ghana. Besides, the study found that current ratio and the size of the firm affects profitability positively.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter provided a general summary and conclusion for the study, as well as recommendations for further studies. At the end of the chapter, limitations of the study were provided.

5.1 Summary of the Study

Working capital management is an important part of financial management and its primary task is concerned with the matching of asset and liability movements over time. The study investigated the effect of working capital management on firm profitability with a special focus on listed manufacturing firms on the Ghana Stock Exchange. The findings from the study is expected to help manufacturing firms in Ghana to better manage their working capital and achieve increased level of profitability. The literature review revealed that efficient working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates the risk of inability to meet due short term obligations on the one hand and avoid excessive investment in these assets on the other hand (Eljelly, 2004). To accomplish the relationship between working capital management and firm profitability, secondary data was collected from the annual reports of ten (10) manufacturing firms listed on the Ghana Stock Exchange. The study relied on Pearson's correlation and multivariate regression technique to analyze the relationship between working capital management and profitability. The results from the study indicated a negative relationship between profitability and, the number of days receivables and the

number of days account payable. However, the study found no relationship between the number of days of inventory and the cash conversion period and profitability for the selected manufacturing firms in Ghana. Besides, the study found that current ratio and the size of the firm affects profitability positively.

5.2 Conclusions of the Study

The following conclusions were made from the study: First, the study found that return on assets is reduced by lengthening the number of days of accounts receivables. The negative relationship between profitability and the number of days accounts receivables could be explained by the tendency of less profitable firms to grant longer payment deadlines to customers as an incentive to increase patronage. Second, the findings from the study revealed that firm profitability is reduced by a rise in the number of days account payable. With the number of days accounts payable indicating 135 on average, it means that firms takes longer time to pay their suppliers. Although, delaying payments to suppliers may the cheapest way of financing an organization, such a behaviour often send negative signals about the creditworthiness of the company, a phenomenon which may affect supplies and hence profitability. Third, the study found that the conventional measure of liquidity, current ratio is positively related to profitability. Thus, manufacturing firms which better manage their liquidity positions are likely to be more profitable. Finally, the study also revealed that there is a positive relationship between profitability and firm size. This is in line with the literature that large firms may enjoy certain advantages such as economics of scale in production due to declining average variable cost. Large firms may also have increased sales levels and more competitive than smaller firms which place them in a position to be more profitable.

5.3 Recommendations

Based on the above conclusions, the following recommendations are suggested. First, manufacturing firms should implement policies aimed at ensuring that the number of days of account receivables is shortened in order to improve on their profitability levels. Second, manufacturing firms should endeavour to pay their debt obligations on time in order to be creditworthy thereby avoiding sending bad signals to the market which may affect their operations. This can be done by ensuring that the firms have enough liquid assets which can be converted to cash when the need arises. Finally, manufacturing firms should adopt strategies which will ensure growth of their firms in order to become competitive since the study found a strong relationship between firm size and profitability.

5.4 Limitations of the Study and Suggestion for Further Studies

The following limitations have been identified; first, the researcher would have wanted to cover more manufacturing firms for the study, but due to lack of complete data on some of the manufacturing firms, only 10 companies were chosen. The researcher used ROA to measure profitability. However, there are a lot of measures of profitability such as Return on Investments, Net Profit Margin, Gross Operating Profit, etc. Therefore, further research should be conducted using the other measures of profitability in order to explore the relationship between working capital management and firm profitability.

REFERENCES

Agarwal, V. K. (1978). “*Size, Profitability and Growth of Some Manufacturing Industries*”, unpublished FPM thesis 11M, Ahmedabad.

Arnold, G. (2008). *Corporate Financial Management*. 4th edit. Prentice Hall. Essex.

Benard, A.B. and Jensen, J.B. (1999). Financialization and Manufacturing Firm Profitability. *The Journal of American Academy of Business*, Cambridge. Vol. 10(1)

Beumont S. M. and Begemann, E. (1997). *Measuring association between working capital and return on investment*. South Afr. J. Bus. Manage. 28: 1-5.

Bigsten, A., Collier, P., Dercon, S., Fafchamps, M., Gauthier, B., Gunning, J.W., Isaksson, A., Oduro, A., Oostendorp, R., Pattillo, C., Teal, F., Zeufack, A. (2000). “Contract flexibility and dispute resolution in African manufacturing”, *Journal of Development Studies*, Vol. 36, No.4, pp. 1– 17.

Boulhol, H. (2005). “*Why Haven't Price-Cost Margins Decreased with Globalization?*”

Downloaded on 2.7.2011 from <<http://team.univparis1.fr/teamperso/boulhol/work.htm>>

Brealey, R. A and Myers, S. (2006). *Corporate Finance, Eighth edition*, McGraw hill.

Brian, B. (2009). Working capital policy and liquidity in the small business, *journal of small business management*, jul7, vol 17, issue3, pp. 43-51, Publisher, Blackwell.

Chiou, J-R., Cheng, L. and Wu, H-W. (2006). The Determinants of Working Capital Management. *The Journal of American Academy of Business*, Cambridge. Vol. 10 (1) September, pp.149-155.

Civelek, M.M. and Al-Alami, M.W. (1991). *An empirical investigation of the concentration-profitability relationship in the Jordanian banking system*. Savings Dev., pp.247-259.

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

Demir, F. (2008). Financialization and Manufacturing Firm Profitability, *Journal of the International Academy for Case Studies*.

Eljelly, A.M.A (2004). *Working Capital Management and Profitability*, Case Of Pakistani Firms. *International Review of Business Research Papers* 3(1), pp. 280

Elliot, G. (2006). *Barron's Finance & Investment Handbook*. 7th ed. Hauppauge, NY: Barron's Educational Series.

Evanoff, D.D. and Fortier, D.L. (1988). *Reevaluation of the structure-conduct-performance paradigm in banking*. J. Financial Services Res., pp. 277-294.

Gallagher, T and Andrew, J. (2000). *Financial Management: Principles and Practices with Finance Center Disk*, 2nd Edition, Prentice Hall.

Ganesan, V. (2007). An Analysis of Working Capital Management Efficiency in Telecommunication equipment industry, *River Academic journal* 3(2)

Ghana Stock Exchange, *Annual Reports of Listed Manufacturing Firms* from 2005-2009

Gitman, L. J. (2002). *Principle of Managerial Finance*, 10th Edition, Addison-Wesley.

Hill, and Satoris, (1995). *Short-term Financial Management*, Third edition, Prentice Hall.

Hurdle, G. J. (1974). "Leverage, Risk, Market Structure and Profitability", *Review of Economics and Statistics*, p.56.

Jose, M.L and Lancaster, C. (1996). Corporate Returns and Cash Conversion Cycles, *Journal of Economics and Finance* 20(1):33-46

Horne, J.V. and Wachowicz, J.M. (2010). *Fundamentals of Financial Management*. Prentice Hall: London.

Kaur, J. (2010), "Working Capital Management in Indian Tyre Industry", *International Research Journal of Finance and Economics*, Vol. 46, pp. 7 – 31.

Kraay, A. (1999). "Exportations et Performances Economiques: Etude d'un Panel d'Entreprises Chinoises", *Revue d'Economie Du Developpement*, Vol. 0 No.1-2, pp.183-207.

Kumar, M. (2008). Working Capital Management. Retrieved March 15, 2011.

Lamberson, M. (1995). Changes in working capital of small firms in relation to changes in economic activity. *Mid-American Journal of Business* pp. 45-50.

Lazaridis, I. and Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchanges. *Journal of Financial Management and Analysis*, pp.26-35.

McConnell, J. and Servaes, H. (1990). "Additional evidence on equity ownership and corporate value," *Journal of Financial Economics*, Vol.27, pp. 595- 612.

Nazir, M.S and Talat, A. (2008), Is it better to be Aggressive or Conservative in Managing Working Capital? *Journal of Quality and Technology Management*, Vol 3, No 2, pp.11-21

Neumann, B. and Haid, (1979). “Profitability, Risk and Market Structure in West German Industries”, *The Journal of Industrial Economics*, vol.27, pp.227-242.

Padachi, K. (2006). Trend in working capital management and its impact on firm’s performance: An Analysis of Mauritian Small Manufacturing Firms, *International review of business Research papers* pp.45-58.

Pass, R. and Pike, C. (1984). *An Overview of Working Capital Management and Corporate Financing*. Managerial Finance. Vol. 10 (3), pp. 1-10.

Rehman, A and Nasr, M (2007), Working capital management and profitability-Case of Pakistani firms, *International Review of Business Research Papers* pp.279-300.

Richards, V.D and Laughlin, E.J. (1980) *A Cash Conversion Cycle Approach to Liquidity Analysis*. Financial Management.

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

Saunders and Lewis (2000). *Research Methods for Business Student*, Second Edition, Prentice Hall.

Shin, H-H. and Soenen, L. (1998). *Efficiency of Working Capital Management and Corporate Profitability*. Financial Practice and Education. pp. 37-45.

Smith, K. (1980). Profitability versus Liquidity Tradeoffs in Working Capital Management. *Readings on The Management of Working Capital*, Smith, K.V. (Ed.). St. Paul, MN, West Publishing Firm, USA, pp.549-562.

Subramaniam, K. K. and Papola, T. S. (1971). "Profitability and Growth of Firms: The case of Indian Chemical Industries", Anvesak.

Teruel, J. G. and Solano, M. (2007). "Effects of Working Capital Management on SME Profitability", *International Journal of Managerial Finance*, pp. 164-177

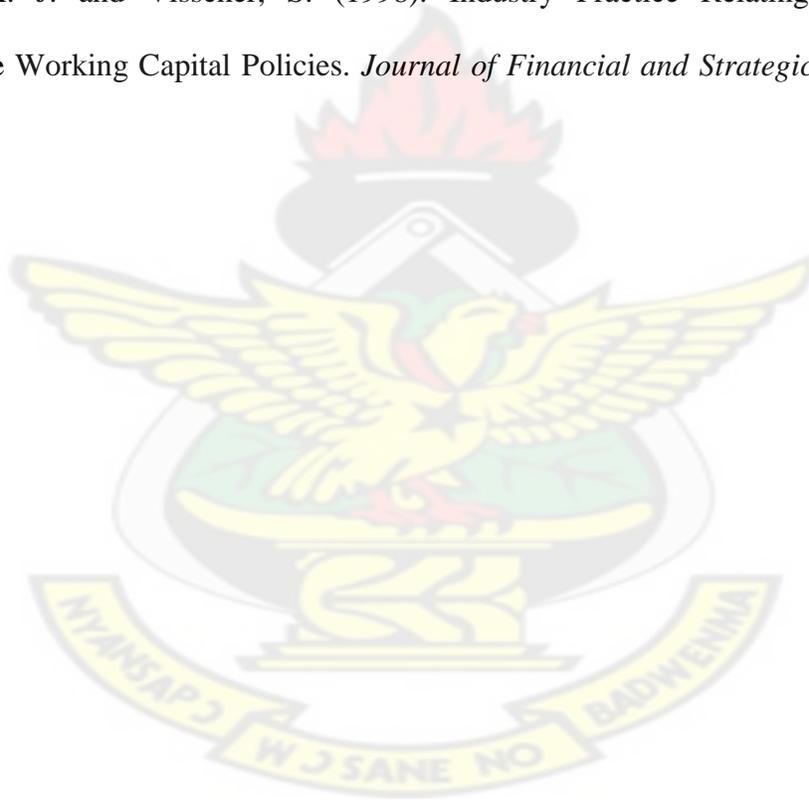
Uyar, A. (2009). The relationship of cash conversion cycle with firm size and profitability: an empirical investigation in Turkey. *International Research Journal of Finance and Economics*, ISSN 1450-2887 Issue 24, Euro Journals Publishing, Inc.

Vasarao, S. (2010). Working Capital Management. Retrieved March 15, 2011, from *India Schools, Colleges, Education, Entrance Practice Test and Aptitude Questions*.

Vijayakumar, A. (2002), “*Determinants of Corporate Size, Growth and Profitability – The Indian Experience*”, in the book “*Research Studies in Commerce and Management*”, Classical Publishing Company, New Delhi, pp. 66 - 74.

Vishnani, S. (2007). Impact of Working Capital Management Policies on Corporate Performance: An Empirical Study. *The Managed Acc.*, ICWAI, Kolkata, pp. 748-750.

Weinraub H. J. and Visscher, S. (1998). Industry Practice Relating To Aggressive Conservative Working Capital Policies. *Journal of Financial and Strategic Decision* pp.11-18. 39.



GLOSSARY

AR	Account receivables
AP	Account payables
CCC	Cash conversion cycle
COGS	Cost of Goods Sold
CR	Current Ratio
GEAR	Gearing Ratio
GOP	Gross operating profit
INV	Inventory
OECD	Organization for Economic Co-operation and Development
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
WC	Working capital
WCP	Working capital policy
WCMP	Working capital management policy

APPENDIX

Appendix 1

NO.	LISTED FIRMS	YEARS	NO. OF DAYS REC.	NO. OF DAYS PAY	NO. OF DAYS INV	INV TURNOVER	CCC	NOP	CR	DEBT TO EQTY RATIO	ROE%	ROA
1	ALUWORKS GHANA LIMITED	2009	36.79	54.28	67.80	5.38	50.31	0.16	0.44	2.13	-32.13	0.09
		2008	59.28	98.28	92.22	3.96	53.22	0.05	0.72	1.39	-13.25	0.04
		2007	69.54	26.53	100.58	3.63	143.59	0.06	1.03	4.38	-45.92	0.08
		2006	56.40	64.81	84.06	4.34	75.65	0.04	1.66	0.50	15.10	0.07
		2005	38.69	22.27	116.00	3.15	132.43	0.05	1.42	0.89	19.40	0.09
2	ARYTON DRUG MANUFACTURING	2009	99.05	21.14	106.87	3.42	184.78	0.18	9.81	0.00	24.25	0.22
		2008	71.03	38.16	169.08	2.16	201.95	0.15	6.64	0.00	19.11	0.17
		2007	90.99	39.86	112.19	3.25	163.32	0.16	6.37	0.00	18.87	0.17
		2006	92.72	49.51	97.01	3.76	140.21	0.13	4.82	0.00	16.30	0.14
		2005	78.09	62.29	76.79	4.75	92.60	0.10	2.04	0.02	25.37	0.24
3	COCOA PROCESSING COMPANY	2009	178.84	234.93	197.48	1.85	141.39	-0.37	1.28	5.01	-67.52	-0.09
		2008	108.81	63.85	77.19	4.73	122.15	-0.20	2.18	1.83	-21.20	-0.07
		2007	184.70	229.45	126.15	2.89	81.39	0.01	1.48	1.43	2.07	0.01
		2006	68.04	531.94	288.59	1.26	-175.31	0.03	0.74	1.25	4.76	0.01
		2005	134.54	355.87	365.00	2.70	143.67	0.03	0.93	1.43	4.56	0.01
4	FANMILK GHANA LIMITED	2009	10.26	82.07	55.53	6.57	-16.29	0.18	1.89	0.00	43.20	0.30
		2008	14.12	76.86	53.86	6.78	-8.88	0.13	1.67	0.00	32.95	0.21
		2007	14.16	76.46	57.07	6.40	-5.23	0.11	1.62	0.01	28.10	0.18
		2006	9.18	67.85	52.90	6.90	-5.77	0.10	1.17	0.08	29.8	0.18
		2005	4.85	64.10	67.40	5.42	8.15	0.11	0.93	0.19	40.84	0.22
5	GUINNESS GHANA BREWERIES	2009	39.99	141.90	129.17	2.83	27.27	0.06	0.71	0.53	17.94	0.05
		2008	46.07	131.79	121.21	3.01	35.49	0.10	0.85	0.57	22.03	0.09
		2007	54.62	101.37	80.47	4.54	33.72	0.11	1.19	3.12	21.89	0.11
		2006	53.81	225.64	78.70	4.64	-93.13	0.14	0.60	0.33	28.90	0.12
		2005	36.66	146.18	78.62	4.64	-30.90	0.21	0.67	0.39	24.70	0.17

6	PZ CUSSONS GHANA LIMITED	2009	46.39	120.08	154.80	2.36	81.11	0.02	1.73	0.03	3.90	0.02
		2008	59.87	141.49	183.26	1.99	101.64	0.08	1.71	0.17	16.73	0.09
		2007	65.34	132.28	175.91	2.07	108.97	0.12	1.88	0.08	18.97	0.12
		2006	40.18	136.34	182.35	2.00	86.20	0.10	1.87	0.00	15.25	0.09
		2005	44.14	100.57	143.81	2.54	87.38	0.05	1.90	0.00	8.08	0.05
7	UNILEVER GHANA LIMITED	2009	19.11	99.62	62.88	5.81	-17.63	0.01	1.35	0.06	2.68	0.01
		2008	26.56	124.66	105.32	3.47	7.22	0.13	1.56	0.13	39.45	0.17
		2007	19.32	71.31	49.49	7.37	-2.50	0.08	1.73	0.17	22.05	0.12
		2006	13.20	60.81	46.05	7.93	-1.56	0.07	1.06	0.14	31.00	0.14
		2005	16.92	69.68	63.47	5.75	10.70	0.09	1.10	0.33	34.20	0.15
8	ACCRA BREWERY LIMITED	2009	73.45	465.03	97.65	3.74	-293.92	-0.07	0.35	1.00	-26.98	-0.04
		2008	81.05	222.96	74.08	4.93	-67.82	0.04	0.70	0.08	7.93	0.03
		2007	114.92	198.86	46.75	7.81	-37.20	0.01	0.82	0.05	3.20	0.01
		2006	140.71	192.61	57.83	6.31	5.93	-0.01	1.00	0.05	-2.42	-0.01
		2005	132.00	171.42	64.50	5.66	25.07	0.07	1.15	0.08	13.16	0.07
9	AFRICAN CHAMPION INDUSTRIES LTD	2009	136.60	242.04	27.12	13.46	-78.32	-0.12	0.55	0.06	-8.31	-0.05
		2008	123.74	196.21	29.21	12.50	-43.27	-0.22	0.55	0.06	-11.25	-0.08
		2007	36.19	166.15	45.32	8.05	-84.63	0.02	0.44	0.09	3.00	0.02
		2006	25.49	137.95	29.84	12.23	-82.63	-0.20	0.38	0.16	-29.75	-0.16
		2005	50.32	138.80	60.12	6.07	-28.36	-0.18	0.72	0.13	-18.24	-0.12
10	CAMELOT GHANA LIMITED	2009	92.53	76.95	74.78	4.88	90.36	0.02	1.12	5.68	7.90	0.02
		2008	21.46	78.42	92.86	3.93	35.90	0.05	0.92	5.36	25.53	0.04
		2007	83.02	153.75	65.40	5.58	-5.33	0.00	1.06	8.96	2.49	0.00
		2006	93.83	132.79	52.19	6.99	13.23	0.01	1.23	6.13	8.72	0.01
		2005	91.18	131.18	365.00	5.19	325.00	0.01	1.28	1.63	3.73	0.01

NO.	LISTED FIRMS	YEARS	REVENUE GH¢'000	ACCOUNT RECEIVABLE GH¢'000	NO. OF DAYS IN YRS	ACCOUNT PAYABLE GH¢'000	COST OF SALES GH¢'000	INVENTORY GH¢'000	COST OF SALES GH¢'000	NET INCOME GH¢'000	TOTAL ASSETS GH¢'000	C
1	ALUWORKS	2009	34,271.00	3,454.00	365	5,522.00	37,135.00	6,898.00	37,135.00	5,404.00	59,921.00	15
		2008	57,127.00	9,278.00	365	15,756.00	58,518.00	14,785.00	58,518.00	2,958.00	70,808.00	25
		2007	53,346.00	10,164.00	365	4,046.00	55,663.00	15,338.00	55,663.00	3,460.00	45,314.00	27
		2006	49,246.30	7,609.80	365	8,264.80	46,548.10	10,719.70	46,548.10	2,067.70	28,761.10	20
		2005	47,772.70	5,063.70	365	2,714.00	44,491.10	14,140.10	44,491.10	2,258.00	26,481.90	20
2	ARYTON DRUGS	2009	15,513.57	4,210.12	365	696.49	12,025.30	3,520.89	12,025.30	2,847.50	12,725.55	
		2008	11,902.56	2,316.27	365	1,020.99	9,764.91	4,523.54	9,764.91	1,783.30	10,448.85	
		2007	9,481.08	2,363.51	365	833.61	7,633.40	2,346.26	7,633.40	1,475.73	8,791.83	
		2006	7,954.28	2,020.60	365	908.85	6,700.03	1,780.66	6,700.03	1,033.68	7,527.70	
		2005	7,328.91	1,568.08	365	1,070.95	6,275.88	1,320.32	6,275.88	758.93	3,179.22	
3	CPC	2009	45,541.42	22,314.41	365	40,388.45	62,750.12	33,950.28	62,750.12	(16,947.59)	197,059.57	59
		2008	59,264.80	17,667.71	365	12,502.12	71,469.85	15,114.23	71,469.85	(11,968.71)	176,018.86	35
		2007	48,217.22	24,398.99	365	30,150.13	47,960.70	16,576.02	47,960.70	647.19	106,631.87	45
		2006	29,043.60	5,414.40	365	41,491.40	28,470.00	22,510.00	28,470.00	794.90	79,443.20	33
		2005	27,964.40	10,307.60	365	26,753.40	27,440.00	10,169.20	27,440.00	740.90	66,402.70	29
4	FANMILK GH.	2009	82,471.00	2,318.00	365	14,272.00	63,473.00	9,656.00	63,473.00	15,156.00	51,114.00	27
		2008	55,041.00	2,129.00	365	9,719.00	46,154.00	6,811.00	46,154.00	7,054.00	32,858.00	17
		2007	41,068.00	1,593.00	365	7,398.00	35,317.00	5,522.00	35,317.00	4,354.00	23,707.00	12
		2006	32,374.70	814.20	365	5,235.80	28,167.10	4,082.20	28,167.10	3,274.70	18,297.00	
		2005	31,246.40	415.20	365	4,663.20	26,552.30	4,903.00	26,552.30	3,522.30	15,798.30	

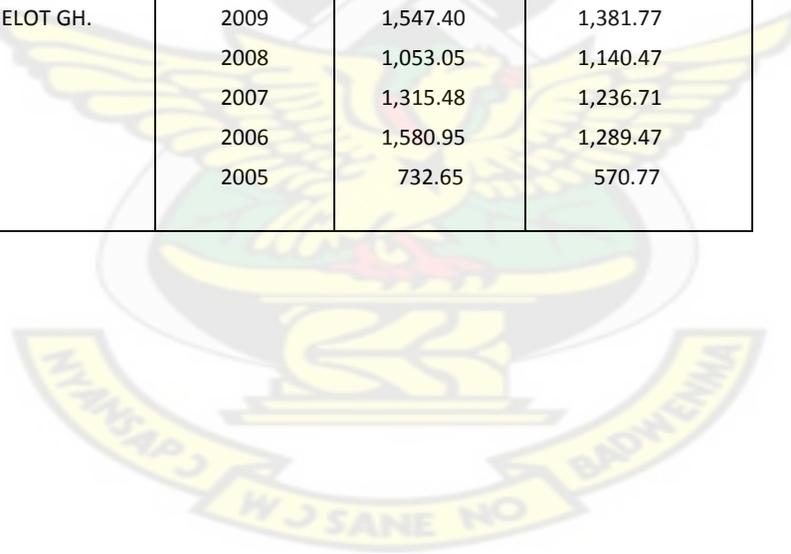
5	GUINNESS GH.	2009	200,968.00	22,018.00	365	68,854.00	177,113.00	62,681.00	177,113.00	11,435.00	212,323.00	98
		2008	135,810.00	17,142.00	365	40,349.00	111,747.00	37,109.00	111,747.00	13,693.00	160,321.00	60
		2007	124,848.00	18,684.00	365	30,768.00	110,787.00	24,424.00	110,787.00	14,094.00	132,627.00	48
		2006	104,759.90	15,443.20	365	53,458.80	86,476.60	18,645.30	86,476.60	15,009.10	120,271.10	38
		2005	79,945.20	8,029.20	365	26,651.00	66,544.40	14,333.80	66,544.40	16,808.50	100,197.80	30
6	PZ CUSSONS GH.	2009	44,643.16	5,673.42	365	14,297.28	43,459.17	18,431.32	43,459.17	837.11	38,426.28	20
		2008	42,775.34	7,016.90	365	14,910.18	38,464.41	19,311.85	38,464.41	3,508.18	38,360.54	27
		2007	29,129.72	5,214.95	365	9,394.44	25,921.32	12,492.50	25,921.32	3,369.03	29,070.50	18
		2006	22,376.15	2,463.51	365	7,497.18	20,070.69	10,027.31	20,070.69	2,230.85	24,063.84	15
		2005	19,597.98	2,369.79	365	5,003.45	18,159.48	7,154.94	18,159.48	1,001.91	18,782.87	10
7	UNILEVER GH.	2009	167,952.00	8,792.00	365	44,702.00	163,790.00	28,215.00	163,790.00	1,262.00	117,324.00	63
		2008	165,590.00	12,051.00	365	46,394.00	135,843.00	39,196.00	135,843.00	22,236.00	129,474.00	74
		2007	139,054.00	7,360.00	365	24,598.00	125,901.00	17,072.00	125,901.00	11,090.00	95,583.00	43
		2006	118,712.40	4,293.50	365	17,895.20	107,406.20	13,550.20	107,406.20	8,856.00	64,218.50	20
		2005	103,524.70	4,797.80	365	18,477.60	96,785.30	16,830.60	96,785.30	9,186.20	61,542.10	20
8	ACCRA BREWERY	2009	33,641.00	6,770.00	365	45,968.00	36,080.00	9,653.00	36,080.00	(2,240.00)	55,815.00	10
		2008	25,219.00	5,600.00	365	14,488.00	23,718.00	4,814.00	23,718.00	886.00	26,954.00	10
		2007	24,504.00	7,715.00	365	13,191.00	24,211.00	3,101.00	24,211.00	337.00	24,232.00	10
		2006	19,894.90	7,669.80	365	10,899.60	20,654.90	3,272.40	20,654.90	(247.10)	21,650.90	10
		2005	19,824.60	7,169.50	365	8,543.90	18,191.90	3,214.60	18,191.90	1,374.20	20,414.20	10

9	AFRICAN CHAMPION INDUSTRIES	2005	2,418.95	333.48	365	1,089.78	2,865.75	472.01	2,865.75	(446.40)	3,849.46
		2009	3,948.01	1,477.54	365	2,934.38	4,425.11	328.77	4,425.11	(458.36)	8,787.81
		2008	3,008.86	1,020.01	365	2,210.78	4,112.55	329.08	4,112.55	(671.95)	8,515.25
		2007	3,096.38	307.02	365	1,508.40	3,313.71	411.48	3,313.71	59.39	3,662.76
		2006	2,744.83	191.67	365	1,257.62	3,327.41	272.01	3,327.41	(561.12)	3,451.92
		2005	2,418.95	333.48	365	1,089.78	2,865.75	472.01	2,865.75	(446.40)	3,849.46
10	CAMELOT GH.	2009	3,274.29	830.08	365	690.32	3,274.29	670.83	3,274.29	57.06	3,645.26
		2008	2,567.63	150.99	365	551.66	2,567.63	653.21	2,567.63	132.75	3,254.57
		2007	2,020.36	459.56	365	851.05	2,020.36	362.00	2,020.36	7.85	3,489.34
		2006	3,380.20	868.95	365	1,229.74	3,380.20	483.28	3,380.20	31.85	3,891.86
		2005	1,468.86	366.92	365	522.45	1,453.70	280.21	1,453.70	13.23	1,501.55



NO.	LISTED FIRMS	YEARS	CURRENT ASSETS GH¢'000	CURRENT LIABILITIES GH¢'000
1	ALUWORKS	2009	15,312.00	35,043.00
		2008	25,764.00	35,538.00
		2007	27,043.00	26,367.00
		2006	20,783.50	12,518.40
		2005	20,117.20	14,122.80
2	ARYTON DRUGS	2009	9,650.39	984.09
		2008	7,410.85	1,115.89
		2007	6,194.60	972.96
		2006	5,713.53	1,184.56
		2005	3,031.84	1,487.49
3	CPC	2009	59,240.17	46,244.97
		2008	35,840.97	16,461.97
		2007	45,372.39	30,590.46
		2006	31,012.90	41,836.00
		2005	25,248.20	27,011.80
4	FANMILK GH.	2009	27,845.00	14,702.00
		2008	17,774.00	10,640.00
		2007	12,226.00	7,530.00
		2006	7,481.20	6,398.10
		2005	6,196.70	6,673.40
5	GUINNESS GH.	2009	98,664.00	139,736.00
		2008	60,321.00	70,924.00
		2007	48,118.00	40,347.00
		2006	38,595.40	64,787.00
		2005	30,877.30	46,336.60
6	PZ CUSSONS GH.	2009	26,667.89	15,383.61
		2008	27,045.45	15,858.86
		2007	18,536.99	9,862.41
		2006	15,085.44	8,061.06
		2005	10,418.88	5,485.02

7	UNILEVER GH.	2009	61,734.00	45,859.00
		2008	74,425.00	47,704.00
		2007	43,700.00	25,305.00
		2006	26,690.40	25,162.00
		2005	26,937.20	24,520.60
8	ACCRA BREWERY	2009	16,513.00	46,823.00
		2008	10,414.00	14,911.00
		2007	10,840.00	13,191.00
		2006	10,977.70	10,936.10
		2005	10,463.50	9,119.20
9	AFRICAN CHAMPION INDUSTRIES	2005	825.40	1,144.13
		2009	1,813.40	3,274.67
		2008	1,411.07	2,543.76
		2007	731.66	1,680.73
		2006	500.36	1,307.71
		2005	825.40	1,144.13
10	CAMELOT GH.	2009	1,547.40	1,381.77
		2008	1,053.05	1,140.47
		2007	1,315.48	1,236.71
		2006	1,580.95	1,289.47
		2005	732.65	570.77



REFERENCES

Agarwal, V. K. (1978). “*Size Profitability and Growth of Some Manufacturing Industries*”, unpublished FPM thesis 11M, Ahmedabad.

Arnold, G. (2008). *Corporate Financial Management*. 4th edit. Prentice Hall. Essex.

Benard, A.B. and Jensen, J.B. (1999). Financialization and Manufacturing Firm Profitability. *The Journal of American Academy of Business*, Cambridge. Vol. 10(1)

Beumont S. M. and Begemann, E. (1997). *Measuring association between working capital and return on investment*. South Afr. J. Bus. Manage. 28: 1-5.

Bigsten, A., Collier, P., Dercon, S., Fafchamps, M., Gauthier, B., Gunning, J.W., Isaksson, A., Oduro, A., Oostendorp, R., Pattillo, C., Teal, F., Zeufack, A. (2000). “Contract flexibility and dispute resolution in African manufacturing”, *Journal of Development Studies*, Vol. 36, No.4, pp. 1– 17.

Boulhol, H. (2005). “*Why Haven't Price-Cost Margins Decreased with Globalization?*”
Downloaded on 2.7.2011 from «<http://team.univparis1.fr/teamperso/boulhol/work.htm>»

Brealey, R. A and Myers, S. (2006). *Corporate Finance, Eighth edition*, McGraw hill.

Brian, B. (2009). Working capital policy and liquidity in the small business, *journal of small business management*, jul7, vol 17, issue3, pp. 43-51, Publisher, Blackwell.

Chiou, J-R., Cheng, L. and Wu, H-W. (2006). The Determinants of Working Capital Management. *The Journal of American Academy of Business*, Cambridge. Vol. 10 (1) September, pp.149-155.

Civelek, M.M. and Al-Alami, M.W. (1991). *An empirical investigation of the concentration-profitability relationship in the Jordanian banking system*. Savings Dev., pp.247-259.

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

Demir, F. (2008). Financialization and Manufacturing Firm Profitability, *Journal of the International Academy for Case Studies*.

Eljelly, A.M.A (2004). *Working Capital Management and Profitability*, Case Of Pakistani Firms. *International Review of Business Research Papers* 3(1), pp. 280

Elliot, G. (2006). *Barron's Finance & Investment Handbook*. 7th ed. Hauppauge, NY: Barron's Educational Series.

Evanoff, D.D. and Fortier, D.L. (1988). *Reevaluation of the structure-conduct-performance paradigm in banking*. J. Financial Services Res., pp. 277-294.

Gallagher, T and Andrew, J. (2000). *Financial Management: Principles and Practices with Finance Center Disk*, 2nd Edition, Prentice Hall.

Ganesan, V. (2007). An Analysis of Working Capital Management Efficiency in Telecommunication equipment industry, *River Academic journal* 3(2)

Ghana Stock Exchange, *Annual Reports of Listed Manufacturing Firms* from 2005-2009

Gitman, L. J. (2002). *Principle of Managerial Finance*, 10th Edition, Addison-Wesley.

Hill, and Satoris, (1995). *Short-term Financial Management*, Third edition, Prentice Hall.

Hurdle, G. J. (1974). "Leverage, Risk, Market Structure and Profitability", *Review of Economics and Statistics*, p.56.

Jose, M.L and Lancaster, C. (1996). Corporate Returns and Cash Conversion Cycles, *Journal of Economics and Finance* 20(1):33-46

Horne, J.V. and Wachowicz, J.M. (2010). *Fundamentals of Financial Management*. Prentice Hall: London.

Kaur, J. (2010), "Working Capital Management in Indian Tyre Industry", *International Research Journal of Finance and Economics*, Vol. 46, pp. 7 – 31.

Kraay, A. (1999). "Exportations et Performances Economiques: Etude d'un Panel d'Entreprises Chinoises", *Revue d'Economie Du Developpement*, Vol. 0 No.1-2, pp.183-207.

Kumar, M. (2008). Working Capital Management. Retrieved March 15, 2011.

Lamberson, M. (1995). Changes in working capital of small firms in relation to changes in economic activity. *Mid-American Journal of Business* pp. 45-50.

Lazaridis, I. and Tryfonidis, D. (2006). Relationship between working capital management and profitability of listed companies in the Athens stock exchanges. *Journal of Financial Management and Analysis*, pp.26-35.

McConnell, J. and Servaes, H. (1990). "Additional evidence on equity ownership and corporate value," *Journal of Financial Economics*, Vol.27, pp. 595- 612.

Nazir, M.S and Talat, A. (2008), Is it better to be Aggressive or Conservative in Managing Working Capital? *Journal of Quality and Technology Management*, Vol 3, No 2, pp.11-21

Neumann, B. and Haid, (1979). “Profitability, Risk and Market Structure in West German Industries”, *The Journal of Industrial Economics*, vol.27, pp.227-242.

Padachi, K. (2006). Trend in working capital management and its impact on firm’s performance: An Analysis of Mauritian Small Manufacturing Firms, *International review of business Research papers* pp.45-58.

Pass, R. and Pike, C. (1984). *An Overview of Working Capital Management and Corporate Financing*. Managerial Finance. Vol. 10 (3), pp. 1-10.

Rehman, A and Nasr, M (2007), Working capital management and profitability-Case of Pakistani firms, *International Review of Business Research Papers* pp.279-300.

Richards, V.D and Laughlin, E.J. (1980) *A Cash Conversion Cycle Approach to Liquidity Analysis*. Financial Management.

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

Saunders and Lewis (2000). *Research Methods for Business Student*, Second Edition, Prentice Hall.

Shin, H-H. and Soenen, L. (1998). *Efficiency of Working Capital Management and Corporate Profitability*. Financial Practice and Education. pp. 37-45.

Smith, K. (1980). Profitability versus Liquidity Tradeoffs in Working Capital Management. *Readings on The Management of Working Capital*, Smith, K.V. (Ed.). St. Paul, MN, West Publishing Firm, USA, pp.549-562.

Subramaniam, K. K. and Papola, T. S. (1971). "Profitability and Growth of Firms: The case of Indian Chemical Industries", Anvesak.

Teruel, J. G. and Solano, M. (2007). "Effects of Working Capital Management on SME Profitability", *International Journal of Managerial Finance*, pp. 164-177

Uyar, A. (2009). The relationship of cash conversion cycle with firm size and profitability: an empirical investigation in Turkey. *International Research Journal of Finance and Economics*, ISSN 1450-2887 Issue 24, Euro Journals Publishing, Inc.

Vasarao, S. (2010). Working Capital Management. Retrieved March 15, 2011, from *India Schools, Colleges, Education, Entrance Practice Test and Aptitude Questions*.

Vijayakumar, A. (2002), “*Determinants of Corporate Size, Growth and Profitability – The Indian Experience*”, in the book “*Research Studies in Commerce and Management*”, Classical Publishing Company, New Delhi, pp. 66 - 74.

Vishnani, S. (2007). Impact of Working Capital Management Policies on Corporate Performance: An Empirical Study. *The Managed Acc.*, ICWAI, Kolkata, pp. 748-750.

Weinraub H. J. and Visscher, S. (1998). Industry Practice Relating To Aggressive Conservative Working Capital Policies. *Journal of Financial and Strategic Decision* pp.11-18. 39.

