

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

**THE EFFECT OF WORKING CAPITAL MANAGEMENT ON FIRMS
PROFITABILITY: A STUDY OF LISTED MANUFACTURING FIRMS ON
THE GHANA STOCK EXCHANGE**

By

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DECLARATION

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

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DEDICATION

I dedicate this thesis to my Husband Mr. Frederick Agyapong and kids, Nana Ama Sakyiwaa Agyapong and Nana Kwame Agyapong.

ABSTRACT

Working capital is the backbone of each firm and on the off chance that it is productively overseen, it gets to be useful to the firm in light of the fact that it has an immediate effect on company's benefit. 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 on Return on Total asset as dependent variable of Ghanaian firms. Correlation and Regression were used for the analysis and the results showed that there is a negative relationship between profitability and, the number of day's account receivables and the number of days account payable. However, the study found a positive relationship amongst the number of days of inventory 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 or strategies aimed at ensuring that the number of days of account receivables is shortened in order to enhance on their profitability levels. Likewise, manufacturing firms ought to attempt to pay their obligation commitments on time with a specific end goal, to abstain from sending terrible signs to the business that organizations have some budgetary issues and it may go bankrupt, resultantly its goodwill will be ruined and the estimation of its shares will go down which may influence their operations.

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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

CHAPTER ONE

GENERAL INTRODUCTION

Each measure of assets or resources put into the business is relied upon to yield returns for its proprietors. However enormous or little the business may be, there is the need to set up legitimate cash systems that will be used to manage the firm regarding productivity. The expanding rivalries among contemporary business have moved corporate target from just benefit expansion to incorporate different goals, for example, liquidity and dissolvability of the organization.

Working capital management, capital structure management and capital planning are the three fundamental zones in corporate finance. Capital structure management and capital planning discusses the administration of long term capital of a business or venture in transient times. Effective working capital management includes arranging and controlling current assets and current liabilities in a way that takes out the danger of powerlessness to meet temporary commitments and further stay away from outrageous interest in profits by Eljelly, 2004. One explanation behind this, is that present resources are fleeting speculations that are persistently being changed over into other resource.

Liquidity and profitability are two fundamental parts of corporate business life. Liquidity measures the capacity of an organization to respect all the developing commitments. No firm can continue without liquidity. It includes the choice of the sum and structure of current assets and the financing of these benefits. Current assets incorporate every profit into the business commonly in a year and such temporary investment may be promptly changed over into cash upon need. Working Capital Management of a firm to a limited extent influences its profitability. Working Capital

management of business and financial related of Inventory, credit, buying, marketing, sovereignty, venture arrangement or investment policies and high profit is prone to the level of WC tied up in the creation and offering of items. Giving constrained regards for the management of income, working capital can never be a possibility for financial related framework. This is valid since working capital represents more than 33% (1/3) of aggregate capital utilized.

Fitting management approach on working capital can make esteem for its proprietor's whiles insufficient arranging of working capital may bring about monetary trouble and firms can even go bankrupt. The recent will prompt lost in shareholder's worth on speculation. Working capital is viewed as the life blood of any association and the point has pulled in researchers in both developed and developing economies. Hence, the motivation behind this study is to evaluate how functioning capital management influences profit of listed organizations on Ghana Stock Exchange. The discoveries from the study are relied upon to help manufacturing organizations in Ghana to better deal with their working capital in order to build its profit or gainfulness.

1.1 Statement of Problem

A definitive goal of firms over the globe is to augment benefit and accomplish long term development inside of its worldwide rivalry. This target can't be accomplished without compelling management of capital, particularly short-lived capital since liquidity management has extraordinary impact on the survival of the firm. The powerlessness of firms to adequately deal with their working capital may bring about indebtedness. Case in point, if a firm does not have enough subsidizes to settle its transient obligations it might be compelled to exchange by its lenders. Hence, living up to expectations capital management must be given a fitting consideration since the

survival of the firm relies upon it. Despite the fact that, liquidity management guarantees that organizations have the capacity to meet their fleeting commitments, it accompanies opens cost. Holding an excessive amount of liquidity may be to the detriment of profitability. In this manner, there is the need to review the effect of working capital management on profitability of listed organizations in Ghana. Does compelling working capital management enhance profitability or gainfulness? The study looks for a response to this inquiry by surveying how functioning capital management influences profitability of listed organizations on the Ghana stock exchange.

1.2 Objective of the Study

The general objective of this study is to assess effect of working capital management on firm profitability using manufacturing companies that are listed on the Ghana Stock Exchange as case study. The specific objectives of the study comprise:

1. To assess how inventory, debtors, creditors and cash affects working capital management.
2. To analyze the relationship between working capital management and profitability of firms.

1.3 Hypotheses

These Hypotheses would be tested:

H_0 There is no significant difference between working capital and firm's profit.

H_A There is a significant difference between working capital and firm's profit.

H_0 There is a negative relationship between working capital and firms' profit.

H_A There is a positive relationship between working capital and firms' profit.

1.4 Justification of the Study

The concerns of working capital management have not achieved the greatest acknowledgment in Ghana regardless of the various studies directed to highlight the consequentiality of working capital management. An appropriate working capital management is essential in light of the fact that when an organization has too little interest in working capital then it demonstrates that organization doesn't have sufficient stocks and accounts receivables which may prompt infelicity underway and consequently a decrease in stocks and the powerlessness of firms to react to high market request on the off chance that it gets to be vital. Then again if the interest in working capital is too gargantuan then an organization needs to bear the expense of capacity of stock, taking care of expense and opportunity cost by Arnold, 2008. The results from the study would along these lines avail manufacturing organizations in Ghana to better deal with their fleeting trusts. It would likewise aide financial managers in the detailing of strategies on working capital management.

1.5 Scope of the Study

The work was limited to all listed industrial firms on the Ghana Stock Exchange. The study employed annual financial reports of manufacturing firms from 2007-2013. The choice of manufacturing companies was as results of availability and easy access to their annual financial reports.

1.6 Organization of the study

The study is in five sections. This present section examined the foundation, proclamation of the issue, targets, speculation testing, legitimization of the study, and extent of the study. Part two introduces an outline of the current hypothetical and experimental writing. Section three thinks on the technique utilized for the study. Part

four exhibits the experimental results got amid the study and in conclusion, section five is given to the synopsis of the different discoveries of the study and their suggestions. It likewise highlights the confinements of the study and makes proposals for future exploration.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Section two comprise of two segments with the presentation of wider conceptions on working capital. We would put accentuation on how to enhance the firm's liquidity by utilizing efficacious approaches and it utmost to businesses. Capital management is an essential component of finance and its main task is mainly with corresponding assets and obligation over time. Working capital management expresses shareholders wealth magnification and its eventual effect on the performance of the firm. The second segment optically canvasses the empirical review of the working capital practice and the correlation amongst well-organized working capital and profitability. It further considers the results of control variables on firm profitability.

2.2 Theoretical Literature

2.2.1 Working Capital Management

Working capital management (WCM) is a very significant factor in the administration of current assets and liabilities. Managing the quantum change between current assets and current liabilities is considered to be working capital management. This has direct effects on profitability of the firm. According to Kaur 2010 WCM “gazes at a wider concept that covers both inventory and work in progress and thereby combining elements of production, operations and financial management”. It also refers to all management actions and decisions that ordinarily influence the extent and efficiency of working capital. WCM is further concerned with the most effective choice of capital sources that the firm is working with and appropriates determination levels of current assets and their use.

Working capital is the lifeblood of every firm and when it is efficiently managed it becomes beneficial to the firm since it has a direct impact on firm's profitability. Liquidity and profitability are the motive for keeping a working capital management. Liquidity focuses on meeting the financial obligation of an enterprise while profitability is concerned with the maximization of shareholder's wealth. There can be conflicts between these two goals. For instance "a profitable long-run investment opportunity can erode company's liquidity in the short-run" by Pass and Pike, 1984. Pass & Pike (1987) in continuation of their work have said that "the lack of planning and control of working capital management is one of the main causes of business failures". Working capital management is very often about trade-offs amongst two main objectives, profitability or liquidity since it will probably shake the balance between the company's financial status by Shin & Soenen, 1998. It is importance to clearly define goals of firms, because the responsibility of the working capital management is often spread over many departments in the company and several managers may pursue it with different goals.

The management of working capital creates value for the shareholders by increasing inventory, creditors, debtors and cash. The firms have the ability of reaching competitive advantage by using effective and efficient utilization of assets. Working capital management is an efficient tool for the manufacturing firm because more than half of the assets are current assets; this proportion exceeds seventy percent (70%) of total assets. "Efficiency in managing working capital also increases cash flow to the firms which in turn increase the growth opportunities for the firms and return to the shareholders" (Ganesan, 2007). Firms where working capital management is not given due consideration cannot survive for a longer period.

2.2.2 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” Vasarao 2010 also refers to working capital as the “life blood and nerve center of an organization”. Just as the flow of blood is vital to the human body for sustaining life, it is vital for maintaining 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 solvency. 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” by Braley and Myers, 2006. This can be written mathematically as:

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, while if current liabilities are in excess to current assets then working capital means net current liabilities (Arnold, 2008). 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 financial year. Current liabilities include debtors, short-term borrowings and accrued expenses.

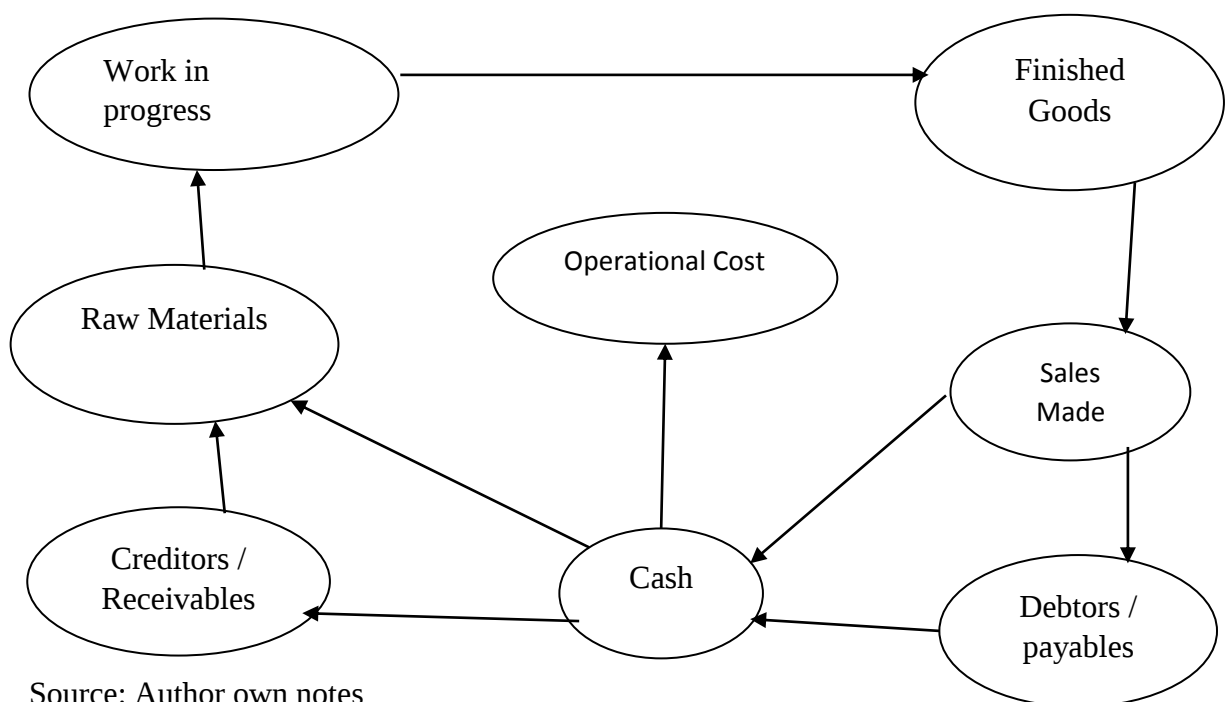
Working capital represents a significant part of firm's assets and liabilities. Medium and small companies tend to have relatively larger amount of capital tied in current assets and liabilities than bigger firms stated in Pass and Pike, 1984. Profitability is a measure of profit generated from the business and is measured in percentages e.g. sales, investments and assets. High percentage of profitability plays a vital role to bring external finance into the business because suppliers, creditors and shareholders do not hesitate to invest their money in such a company (Gitman, 2002).

2.2.3 Working Capital Cycle

The working capital cycle is the measure of the amount of time that elapses between the moments when a business begins investing money in a product or service, and the moment the business receives payment for that product or service. Simply put is the measure of how cash flows into, around and out of a business. A good working capital cycle balances incoming and outgoing payments to maximize working capital. It is the life blood, therefore should be kept flowing and to ensure that cash flows into the business within the shortest possible time. A short working capital cycle suggests a business has good cash flow. For a business to grow it needs access to cash and being able to free up cash from the working capital cycle is cheaper than other sources of finance, such as loans. Kavitha (2007) stated that "the cheapest and best sources of cash exist as working capital right within a business". She emphasized that, good management of working capital will generate cash which will help improve the business and reduce risks. The key to understanding a company's working capital cycle is to know where payments are collected and made, and to identify areas where the cycle is stretched and can potentially be reduced.

The working capital cycle is a diagram rather than a mathematical calculation. The cycle shows all the cash coming in to the business, what it is used for, and how it leaves the business. There are two main elements in a working capital cycle. This is when a business has to pay for supplies, materials, finished goods inventory, and wages to workers who produce goods and services and when a company receives money from its debtors. The capacity of a manufacturing organization to transfer capital around the cycle faster will reduce the amount of money tied up and will enable it generate more cash to fund working capital and minimize borrowing. As a consequence, “the business could reduce the cost of bank interest and would free money available to support additional sales growth or investment” by Kavitha, 2007. For us to understand the importance of working capital we need to understand the working capital cycle described in corporate finance books. Working capital cycle includes all the major dimensions of business operations. Figure 2.1 below shows the working capital cycle.

Figure 2.1: Working Capital Cycle



2.2.4 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. The two components of net working capital are current assets and current liabilities by Arnold, 2008 which include the following things Debts Inventory Receivables and cash. For better understanding of the concept of working capital we need to understand its component and subcomponents.

2.2.4.1 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. With this in mind there should be enough inventories to meet the unexpected rise in demand by Brealey and Myers, 2006.

Similarly, firm can reduce its finished goods inventory by reducing the production and by producing the goods only to meet the current demand which can create trouble for the company if the demand for the product rises suddenly. Such a situation might

cause 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 includes utility bills, insurance, security expenses, and warehouse expenses among others. Carrying cost also involves all the expenses which firms have to bear on handling inventory and ordering cost is a cost that is associated with procuring raw materials. It includes clerical expenses, management time and telephone expenses, etc.

If a finance manager saves the carrying cost by ordering twice or thrice rather than one big lot then ordering cost will increase. 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.

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

Other models that can be used to manage inventory include economic batch quantity, just in time, ABC and quantity discount model etc.

- **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. This mean that 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. Opportunity cost associated with account receivables is that company cannot 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. If a company adopts a policy to have a low level of account receivables then it can reduce the profit by reducing the sales on credit and it contribute to profit by reducing the risk of bad debt by Andrew and Gallagher, 1999. Companies want to have a level of account receivables which maximizes its profit. 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 of account receivables and vice versa. Companies offer credits to customers when using the six C's approach or CAMPARI.

- **Cash**

Cash in hand and cash at bank are considered as part of current assets which is very important for the smooth running of the business. Companies want to have enough cash reserve to exploit the investment opportunities available in the future. 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 as in Andrew and Gallagher, 1999. There are models that can be used to manage cash: which include Miller Orr Model and Baumol Model. Holding cash reserve is justifiable for all businesses but how much cash should a company 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 whiles having more 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. “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” by Brealey and Myers, 2006.

- **Short term Investments**

These are investments in the money markets and it includes short term securities, Treasury bills, commercial papers etc. When a firm needs more cash than its cash reserves 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). 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.

2.2.4.2 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 the following:

- **Accounts Payables**

Accounts payables are debt that must be paid within a given time frame to avoid default. Account payables are generated when company purchases some products for which payment has to be made not later than a specified date in the future. Account payables as part of all business have some advantages associated with it. (Arnold,

2008). Companies should not only make effort to manage their account payables they should also have the ability to generate enough cash to pay the matured account payables. If a company fails to generate enough cash to fulfill the matured account payables then such a situation will pass the negative signal to an efficient market and it will directly affect the share price, relationship with creditors and suppliers. This will result in difficulty of companies in raising more funds by borrowing money or get more supplies from the suppliers. Such a financial distress will lead to the death of companies.

- **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).

2.2.5 Importance of working capital management

Working capital management is an 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 falls, and when there is high demand in the market it becomes difficult for the company to respond immediately whiles cost of storage of inventory opportunity and handling cost must be considered when the investment in working capital is too big (Arnold, 2008).

However promising a company may be, the inefficient handling of working capital may not only lead to lack of profit but even cause its ultimate downfall. When

component of working capital is managed well, it may lead to increase in profit of the organization. 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 then level of inventory will increase, similarly if sale exceeds the level of production then inventory will decrease. On the other hand, the level of cash will increase when companies collect the receivables and its level reduces when it pays its debtors. In the quest to make a stable amount of profit, the firm has to invest enough funds in current assets for the success of its sales. Current assets are desirable because sales do not transfigure into cash instantaneously. There is always a financial year with time lag among production and sales to cash inflow. Well-organized 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.

2.2.6 Sources of Working Capital

There are ways by which a firm can raise adequate funds to encounter its working capital needs. These sources include:

Profitable operations

Working capital could be increased by net income reported and expenses suffered which do not comprise money. Repayment, Depreciation, and loss occurring as a result of selling non- current assets will form part of expenses, and its effect on WC is minimal. Working capital bred from profitable operations would be understated when these expenses are added to it.

Long- Term financing

Stocks that will let shareholders equity increase, may perhaps be issued and sold, nurturing the working capital through the cash assumed. Firms can borrow by issuing loans with long term payment to augment its working capital.

Auction of non- current assets

Assets sold by firms such as machines and vehicles are alternate ways of raising working capital however this approach is not frequent. The cash inflow accrued from the sale of these assets will form part of working capital.

2.2.7 Factors of Working Capital

The sets of rules or formula used to determine the entire investment in working capital analysis. General factor that influence working capital of firms are as follows:

Nature and Size of Business

Needed working capital for the firm is subjective by the nature of business need big amount of cash to be devoted to WC, while public utilities organizations have a little need for a working capital but rather capitalize heavily on non-current properties. The business size has control on the WC need. This is measured in terms of operations. The amount of working capital needed is linked to the size of the firm.

The Manufacturing Cycle

The manufacturing cycle determines its working capital. The process begins with purchase and use of raw materials, follows the process finally finished goods.

Organizations Credit Policy

Working capital is affected by policy of credit used by the firm which will sway the level of book debts. A liberal policy on credit without evaluating the credit

worthiness. Generous policy on credit increases the likelihoods of bad debt. Therefore a firm credit agreement given with the necessary provisions.

Availability of Credit from Financial Institution

Credit rapport obtained from creditors such as financial institutions affects working capital. When liberal credit relations are available from financial institution, then working capital needed becomes very less. Firms with easy access to favourable bank credit will operate with less working capital than a firm without such facility.

Business Fluctuations

Variations in business affect working capital. Demand for goods and services for some firms are seasonal. The effect of this fluctuation on WC, especially provisional WC.

Production Policy

Fluctuations have great effect on production. Peak demand periods may necessitate increased production, making production costly for the firm. Some firms may not find it prudent phases. Steady or constant production approach system may be adopted, regardless of the seasonal variations. The consequences for this buildup of stocks off peak seasons would tie in WC.

Changes in Price Level

Since investments need to be financed firms are required to keep a certain amount of WC through price level rising.

Profit Level and Appropriation

Changes in firm's profit depend on its operations. Cash earned as profit serves as a source of working capital.

Development and Growth Activities

Sustaining development on production and sales, a firm requires an increase in its WC. Nevertheless needed WC funds increase do not monitor growth in business activities but precede it.

Operation Efficiency

The best use of firm resources is working capital. It also enhances and improves profitability on firm's operational efficiency.

2.2.8 Excess and Inadequate Working Capital

Acceptable working capital is required when carrying out business procedures to avoid waste and shortages by Kumar 2008. Both inadequate and excessive WC have adverse effect on firm's financial performance. Insufficient WC is frequently stated as the reason of financial awkwardness

Working capital inadequacy arises from unfortunate situations and bad financial management.

The following reasons would be a disadvantage to a successful business operation:

1. Non- disposal of WC resources makes it problematic for the firm to adopt profitable ventures.
2. Difficulty in implementing operating plans and the accomplishment of firms.
3. Inadequacy of WC funds becomes difficult to meet day-to-day commitment and subsequently operation inefficiencies set in.
4. Investment returns fall when working capital is not efficiently utilized to fixed assets.
5. Benefit of credit policy from financial institutions is lost since WC is insufficient.

6. Inadequate WC leads to businesses not being able to honour its obligations to its creditor. Persistence would mean the business is insolvent.

Insufficient working capital unlocks a company to a thoughtful financial anguish and ruins productivity ideas; the significance of adequate working capital to the firm is immense. The rewards that accrue to a firm include:

1. Continuance of credit worthiness and used, direct labour cost and other cost of doing business.
2. Good credit rating by suppliers and stable supplies for prompt payment of bills.
3. The earning of the business will increase as a result of discount benefits from prompt payment of bills.
4. Persistence production is assured resulting to a steady work for employees.

This creates high determination and increases efficiency but at lower costs.

Since adequate WC is vital, an extreme amount of it has distinct adverse effect on the efficiency and effectiveness of a business. Some drawbacks emphasized are:

1. The frequency investment would not be high as it could be; surplus working capital should be invested to produce profitable return thereby increasing the firm's over-all profit.
2. Too much working capital designates management inability of taking advantage of expanding the business.

2.2.9 Working Capital Policy

Working capital policy can be best described as a strategy that provides the guideline to manage current assets and current liabilities a way that reduces the risk of default in term working capital policy by Brian, 2009. Working capital policy mainly focuses on

the liquidity of current assets to meet current liabilities. Liquidity of a firm is very important because the liquidity of the firm determines what idle resources would be used for as said in Vishnani and Shah, 2007. Current assets are main element of WC and it also depends on the level of current assets compared to the level of current liabilities. From most the literature of finance, working capital policy are classifies into three categories (Arnold, 2008).

2.2.9.1 Aggressive Policy

An aggressive policy of a firm deals with financing current assets with short term obligation given that interest rate is low whiles the risk associated with short term obligation is higher than the long term obligation. It is a risky approach since the difference between liquid assets and short term liabilities turns very little. Few finance managers will take risk of financing long term asset with short term obligations which will push the working capital on the negative. Managers try to augment the profit by paying lesser interest rate with this approach but it becomes very risky when short term interest rate varies or cash inflow is not enough to satisfy the current liabilities (Andrew and Gallagher, 1999). This type of policy is adopted by firms whose operates in a stable economy and is quite certain about future cash flows. Aggressive working capital policy offers short credit terms to customers, holds minimal stock and has a small amount of cash at hand. The policy increases default risk of the firm since it might face lack of resources to meet the short term liabilities and gives high return associated with high risk according to Vishnani and Shah, 2007.

2.2.9.2 Conservative Policy

The balance between risk and return of some firms allows for the moderate or conservative approach policy. It is a mixture of defensive WC policy and aggressive

WC policy. In this approach current assets on the balance sheet are financed with short term borrowings while long term obligations are used to finance fixed assets. Firms using this approach find moderate level of WC with moderate risk and return (Andrew and Gallagher, 1999). Additionally this policy does not only ease the risk of default but also eases the opportunity cost of extra investment in the current assets. The level of WC depends on the sales made since sales are the main source of revenue for any company. The three ways that Sales affect working capital include:

- The direct influence of sales on WC, where an increase in sales would increase WC in the same proportion.
- WC increase in a slower rate as sales increase.
- Companies with stable sale or growing sale can assume the aggressive policy because it has assurance of its future cash inflows and assured to pay its short term liabilities when matured. However, a company with unstable sale, aggressive policy cannot be adopted since its future cash inflows is not safeguarded.

2.2.9.3 Defensive Policy

In adoption defensive policy means the company is using long term debt and equity to finance its fixed assets and key portions of current assets. Risk is reduced by using this approach but affects profitability since long term debt bargains for high interest rate which increases cost of financing business by Andrew and Gallagher, 1999. The company's willingness to take risk, keeping cash or cash equivalent, higher stocks and the appropriate credit terms. The environment in which the business operation also have a role to play in the policy to use. In such conditions it is better to have a high level of current assets e.g. to keep high level of stock to meet the sudden rise in

demand and to avoid the risk of work stoppage in the production. A longer cash conversion cycle would be operated in this policy approach for the company. Defensive policy offers the shield against the financial distress formed by the lack of funds to meet the short term obligation. Likewise funds tie up in a business since of liberal credit policy of the company also have its opportunity cost.

2.2.10 Cash Conversion Cycle

It is a period amongst the payment for raw material and the receipt from the sale of goods. For a manufacturing company, definition is more precise, it is a period for which raw material is kept for the processing including the time taken by the production process with the time for which finished goods are kept and sold and the time taken by the debtors to pay their liability, then minus the maturity period of account payable. This definition makes it quite clear, longer cash conversion cycle required more investment in the current assets. Besides, a good cash conversion cycle is useful for the organization to pay its obligations at the right time which will improve the goodwill of the company. Equally a company with poor cash conversion cycle will not able to meet its current financial obligations. Cash conversion cycle can also use as a tool to measure the aggressiveness of working capital policy. According Arnold, 2008 longer cash conversion cycle corresponds to defensive working capital policy whiles shorter cash conversion cycle corresponds to aggressive working capital policy.

2.2.10.1 Components of Cash Conversion Cycle

Day's inventory held

Day's inventory held can be defined as the period amid the receipt of raw material and supply of finished goods. It depends on the policy a company adopts in the

direction of working capital. An aggressive policy of WC has low inventory level and few days for which inventory can be held.

Days account receivables

The period amid the sale and the receipt of payment is known as trade credit period or days account receivables. It is believed that longer credit period offered by company's results into higher sales, and additional sales bring additional profit into the business. Therefore there exist a relation among the number of days account receivables (Creditors) and profitability of the firm. Large period span between the sale and receipt of account receivables requires higher investment in current assets. Furthermore cash bred by sale is used to pay the operating expenses of the business. If the credit period offered by the company to its customers is longer than the credit period offered by its creditors, then there will be a financial distress leading to bankruptcy (Brealey and Myers, 2006). Finance managers should consider certain thing before deciding on the collection period of account receivables.

Days Account payables

Agreement of business to buy a product and to pay liability on a specified time in the future. The time amid the purchase of goods and its payment is called days account payables (Arnold, 2008). If a business is incapable to pay its account payables on time then it signals to the market that, the firm have some financial difficulty and might go bankrupt thereby affecting its goodwill as well as share value. Shorter duration for payment of account payables can be beneficial for businesses because of discount associated with it on the other hand the company would have to reduce the collection period which can cause reduction in sales. Companies have to be very careful when deciding on the duration of day's account payables. For the researcher the longer duration of day's accounts payable the better.

2.2.11 Firm Profitability

Profitability measures profit generated from the business and is measured in percentage terms e.g., percentage of investments, percentage of sales, percentage of assets. From Gitman 2002, High percentage of profitability plays a vital role in bring external finance to the business because creditors, investors and suppliers do not hesitate to invest in such a company. Enhanced resources utilization leads to value creation. The study of Charitou Elfani Lois 2010 empirically investigated the effect of working capital management on firm's financial performance in an emerging market.

2.2.12 Measurement of Firm Profitability

Several measures of profitability are available for a company's use. Few measures of profitability are discussed here.

Return on Equity (ROE)

It measures the earnings of the company against the investment of mutual stockholders. Shareholders continuously want higher value of ROE. It is calculated in the following way

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

Where, CSE = Common stock equity

Net Profit Margin

It calculates the percentage of each sale remain taking into consideration interest, dividend, taxes, expenses and costs. In other words it calculates the percentage of profit a company earns against its sales. The higher the value of return on sale the better the performance.

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

Where, N.S = Net sales

Return on Total Asset (ROA)

The ratio explains how efficient a company utilizes its existing assets to generate profit. It calculates the percentage of profit a company earns against assets. The higher the value of ROA the better performance obtained.

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

Where, T.A = Total Assets

Gross operation profit

This ratio is use to explains how efficient a company utilize its operating assets. It calculates the percentage of profit earned against the operating assets of the company.

$$\text{Gross operating profit} = \frac{(\text{Sales} - \text{Cost of Goods and Services})}{\text{Total assets} - \text{Financial assets}}$$

Other variables are theoretically assumed to have effect on firm's profitability were also considered as control variables in the model. These comprise the following:

Size

Size is about economies of scale and it is believed that as a company becomes large, it is better place to reap economies of scale. Though, the impact the firm size has on profitability can also be negative. A positive influence on profits from economies of scale may partially offset the ability to diversify assets resulting in a lower risk and a lower required return in line with the portfolio theory by Evanoff and Fortier, 1988. The smaller firms are easy to manage in terms of control and coordination. Long standing relationship amid firm size and profitability has been as a result of

economies of scale and increased customers bargaining power according to Yeboah, 2014. Large companies with huge total assets based that are managed well and tend to cause increased in profit level and are able to outperform smaller companies with small total assets based by Mekonnen, 2011.

Sales Growth

It is a straight forward ratio and is the change of the annual sales measured in percentage. This study assumes a positive effect from sales growth on the performance. Control variable is introduced as the growth in firm sales.

$$\text{Sales Growth} = \frac{\text{Current Sales} - \text{Previous Sales}}{\text{Previous Sales}}$$

Growth improves working capital which in turn has a positive outcome on profitability. The opposite will work for firms with little or no growth opportunities according to Yeboah, 2014.

Debt

This indicator is measured by the rapport between long term debt and total assets which becomes proxy for leverage. The assumption of borrowing from the bank at a fixed rate to invest in the company and gain interest higher than the interest paid to the bank. The variance becomes profit for the shareholders hence boosts Return on Equity. The higher the debt ratio of firms the greater the negative outcome on profitability by Sufian, 2011.

$$\text{Return on Equity} = \text{Total Debt} / \text{Total Asset}$$

2.2.12 Liquidity versus Profitability

Creditors want to secure their investment by keeping a high short term assets than a high short term liabilities. Excessive current assets to current liabilities put creditor in a comfortable situation. Nonetheless managers of the company do not think the same, to pay the matured obligations.

Management decision on the choice of investment is very vital. Creditors of the business would want whiles there comes a cost for creditors when manager invest in long term or fixed assets. In reality, the two extreme are nor is a choice for managers but rather there a balance profitability and liquidity. Prior studies indicating the effects of WC firm's profitability is important. From Banos-Caballero et al, 2010, and Nazir and Afza, 2003, 2009 supported that greater investment in working capital (the longer cash conversion cycle) leads to reduction in the firm's profitability.

The use of samples from Belgian firms by Deloof (2003) exhibited an increase in profitability by reducing the debtor's collection period and the days-in-inventory period. He also found that less profitable firms wait longer to pay their bills. Teruel and Solano, 2007 took samples of small to medium-sized Spanish firms from 1996-2002 periods and found that the firms can make value by reducing the days-in-inventory period and the debtor's collection period, consequently reducing cash conversion cycle. However, different analysts bolster that putting more in real money change cycle (preservationist strategy) may prompt expanded gainfulness since keeping up high stock levels is required to build deals, decrease supply expenses, lessen expense of conceivable intrusion underway and secure against value vacillations.

2.2.13 Financial Assets

Money related resources are immaterial resources and can be changed over into money effectively. It incorporates money, a directly under an agreement to get other budgetary resources or money from the other endeavor, a directly under an agreement to trade monetary instruments under great conditions with another undertaking, value of other organization and money related instruments (Elliot, 2006). Monetary instruments, for example, subordinates are a piece of budgetary resources under an ideal condition, in an unfavorable condition it may transform into money related risk. Monetary resources upgrade the gainfulness as they acquire some arrival the type of profit or give the shield against some danger (swapping scale danger, value hazard and so forth). More elevated amount of money related resources implies that organizations have more elevated amount of liquidity.

2.2.14 Financial Debt

These are commitment of the organization under an agreement to convey money, monetary resources or trade of budgetary instrument. All the credit on organization additionally. Money related commitments, with the budgetary resources of the organization or offer value of the organization (Elliot, 2006). Monetary obligations likewise add gainfulness as it diminishes the expense of issuing offer.

2.3 Empirical Literature

Various studies have been embraced on the issue of determinants of benefit in diverse nations. These experimental studies demonstrate the relationship in the middle of gainfulness and its determinants, which have been completed around the world. The writing extensively furnishes us with the variables that focus an organization's gainfulness which are just as well known among analysts. The accompanying

elements have been found to influence the general level of firm benefit: Market offer, Firm Size, Firm Ownership, Firm Age, Import Competition, Export Intensity, Advertising Intensity, Depreciation Rate, working capital approach and so on. The talk of the past writing gives a clarification of these logical variables that are incorporated in the investigation of this paper. The discoveries of the prior writing are reflected in the decision of free variables to our examination.

In a late multi-nation study, Boulhol (2005) analyzed the determinants of gainfulness for OECD nations in 1970-2003. Specifically, the principle target of his paper was to measure the expert focused impacts of global exchange on gainfulness. As indicated by his gauges, one rate point increment in the import infiltration brings down the benefit, value cost edge, by around 0.005, while by and large; imports have added to a 0.042 reduction in productivity over the example period.

The main study breaking down the causal relationship in the middle of sending out and efficiency at the firm level in writing was by (Bernard and Jensen (1999) on the Unites States economy. Utilizing a mixture of econometric strategies and information from a few nations, Bernard and Jensen (1999) among others discovered proof for self-choice and against the exporting so as to learn theory. Just the most productive firms have an adequate expense point of preference to overcome transportation costs and contend universally. Their study further found that exporters are more beneficial than non-exporters, not on the grounds that there are any advantages connected with fare exercises, yet they are basically more gainful from the start. Just a couple studies—Kraay (1999) for China and Bigsten et al. (2004) for sub-Saharan Africa discovered confirmation unexpectedly. Aw et al. (2000) discovered proof exporting so as to support learning in Taiwan, yet not in South Korea.

Vijayakumar (2002), in 'Determinants of Profitability – A Firm Level Study of the Sugar Industry of Tamil Nadu', dug into the different determinants of benefit, in particular; development rate of offers, vertical mix and influence. Aside from these three variables, other informative variables, for example, current proportion, working costs to deals proportion and stock turnover proportion were utilized. Econometric models were utilized to test the different speculations relating productivity with different variables. The discoveries from the study uncovered that proficiency in stock administration and current resources are critical determinants of benefit. Padachi (2006) analyzed the patterns in working capital administration and its effect on firms' execution. Utilizing profit for resources as a subordinate variable, and utilizing information on 58 little assembling firms for the period 1998-2003, the outcomes from the board information investigation demonstrated that high interest in inventories and receivables is connected with lower gainfulness. The study further uncovered an expanding pattern in the fleeting segment of working capital financing.

García-Teruel, P. J and Martínez-Solan, P. (2008) examined the impacts of working capital administration on the gainfulness of little and medium-sized Spanish firms. Broad information involving 8,872 SMEs covering the period 1996-2002 was utilized. The discoveries, which are vigorous exhibited that gainfulness can be expanded by lessening the quantity of days of records receivable and inventories. Just as, shortening the money transformation cycle additionally enhances the association's gainfulness. So as to find the connection between money change cycle and benefit Shin and Soenen (1998) concentrated on recorded American firms for the time 1975-1994 to figure out the relationship between money transformation cycle and firms gainfulness. The aftereffect of the study demonstrates that there exists solid negative relationship between the two variables of study, so productivity can be expanded by

the diminishment in real money change cycle. Ganesan (2007) examined the effect of working capital administration approach on the productivity of telecom industry of United States. He mulled over 349 organizations over the time of six years (2001-2007). Connection examination, relapse investigation and ANOVA investigation was directed to check the effect on productivity by the WCMP, the outcome demonstrates the feeble negative connection in the middle of benefit and WCMP. They find that the organizations have poor way to deal with deal with the segments of working capital.

Deloof (2003) while contemplating Belgian firms for the period 1992-1996 finds that days Account payable, days Account receivable and stock have negative association with benefit. As indicated by him firms can make esteem by diminishing the sum put resources into the present advantage for a sensible level and by shortening their number of days Account receivable and number of day's stock held. Lazaridis and Tryfonidis (2006) concentrated on Athens stock trade and study 131 recorded organizations over the time of 2001-2004 to explore the effect of productive working capital administration on benefit. They utilized gross working benefit as a measure of gainfulness. Dissimilar to the past investigates they utilized money change cycle, size of the organization, altered monetary resources and budgetary obligation proportion as free variable. The outcome was like the past studies in a manner that association's gainfulness and money change cycles are adversely related.

Teruel and Solano (2007) study the pattern of working capital of Small and Medium ventures of Spain. For this reason they gather the information for 8872 organizations for the period 1996-2002. They utilized ROA as a reliant variable and number of days Account receivable, number of days Accounts payable and number of day's stock held and money change cycle as free variable. Besides size of the firm, development of offers is utilized as control variable. They discover converse relationship between

numbers of days Account receivable and number of day's stock held with the productivity of little to medium undertaking. This implies that if an organization has substantial stock and huge gathering period then it will diminish the productivity. They additionally found that short money transformation cycle will upgrade productivity. Hence this study in a roundabout way shows that forceful working capital strategy can improve the gainfulness.

Uyar (2009) attempted to build up a relationship between money transformation cycle, benefit and size of the firm. The centered was on recorded organizations on Istanbul Stock trade, he gathered the information for 166 organizations from seven unique commercial ventures for the time of one year (2007). He utilized aggregate resource and net deal as a variable to quantify the size and ROE as a variable to gauge productivity. ANOVA and Pearson relationship was hurry to discover the relationship of money change cycle with size of the organization and money transformation cycle with gainfulness. Of course there exists a negative relationship between money transformation cycle and size of the firm, and money change cycle and benefit. Samiloglu and Demirgunes (2008) likewise considered Turkish firms for their study. Not just their study approves the discoveries of Uyar, they likewise found that benefit and development in deals moves in an immediate association with one another.

Chiou and Cheng (2006) concentrated on Taiwan to discover the elements which focus the working capital and can influence the administration of working capital. They utilize the quarterly information for the period 1998-2004. They infer that not just interior component influence the choice about the working capital administration additionally there are couple of outside elements which can specifically influence it. These variables are still to be tended to in a legitimate manner. Inside variables have

more impact on this choice and they incorporate obligation proportion, size of the organization, gainfulness, development and working income.

Rehman and Nasr (2007) took the example of 94 organizations among the organizations which are recorded on Karachi stock trade over the time of 6 years (1999-2004) to consider the pattern of Pakistani firms towards the working capital and effect of their practice on the benefit. They took size of the organization, current proportion, obligation proportion, networking benefit, money transformation cycle and segment of money change cycle as variables. As a control variable they utilize money related resource for aggregate resource proportion. Relapse examination and Pearson's relationship procedures were utilized with the end goal of investigation. They found that money makes the real piece of the present resource of Pakistani firms. Moreover they likewise discovered the negative relationship in the middle of benefit and segments of money change cycle. As indicated by them shareholders riches can be expanded by decreasing the length of money change cycle.

Vishnani and Shah (2007) explore the effect on productivity by distinctive working capital arrangement of 23 recorded organizations of India in the shopper hardware industry. For their study they centered the time of 10 years (1995-2005). They attempt to discover the relationship in the middle of productivity and liquidity i.e. ROCE and current proportion. They find that benefit and liquidity have positive relationship between them yet this relationship is extremely powerless in light of the fact that 9 out of 23 organizations show negative relationship in this way, there is no huge relationship exists in the middle of liquidity and productivity. They likewise discovered the backwards relationship between gathering period, holding period and ROCE.

Nazir and Talat (2008) study the pattern in Pakistani firms towards the using so as to work capital strategy the board information for 204 non-money related firms recorded in Karachi stock trade the period 1998-2005. They found that esteem can be made by taking after the progressive methodology. Besides financial specialists favor those organizations who have forceful methodology towards current liabilities administration. Notwithstanding this they clarify that chief can expand the shareholder's riches by taking after the forceful approach yet they can't raise the bookkeeping execution with the same methodology

In another study Talat and Nazir (2008) concentrated on 208 recorded organizations on Karachi stock trade to discover the relationship among the forceful and preservationist arrangement of working capital. The outcome repudiates the aftereffect of alternate studies examined some time recently. They found that there exist no significant association between the forcefulness of working capital approach and productivity.

2.4 Conclusion

This part gave a survey of important writing on the determinants of benefit. The principal area managed into the hypothetical writing variables plus productivity. The second segment this part gave an expansive survey of experimental writing directed on the components which impact firm gainfulness.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This section surveys the scientific system for the study. It puts the study in its right point of view with respect to the fundamental devices for estimation. It likewise helps the presentation of results and the procurement of proper approach proposals for the study. It starts with a depiction of the hypothetical system embraced for the study and the method to be utilized in executing it. Later, the legitimacy, dependability and meanings of the different variables utilized would be dealt with. At long last, finishing up comments is given.

3.1 Research Design

The essential point in this exploration was to research the impact of WCM on firm benefit. The study concentrated on all recorded assembling firms on the Ghana Stock Exchange from 2007-2013. Yearly reports of these organizations were utilized as the fundamental wellspring of information for the investigation.

3.2 Population of the Study

The population for the study included all manufacturing firms in Ghana. These include both large and small manufacturing organizations that were operating from 2007 to 2013.

3.3 Description of the Sample Size

The inspecting casing of this study was Ghanaian producing organizations that are listed on the Ghana Stock Exchange. The purposes behind narrowing down the

populace to cover just listed organizations were the simple access to yearly financial reports that listed organizations offer.

3.4 Sampling Method

The study used convenience sampling method to select from the manufacturing firms in Ghana. This method was used to select 11 firms that are listed on the stock exchange. Basic arbitrary examining technique was picked and measurable examination was directed keeping in mind the end goal to have generalizability of results. The exploration system includes getting and dissecting budgetary proclamations of the associations concerned covering the period (2007-2013). The study recognized key variables that impact working capital management of firms. Decision of the variables was affected by the past studies on working capital administration.

3.5 Validity of data

The information which was utilized for the investigation was from the monetary reports gave by the organizations in their yearly reports, speaking to their money related circumstances, and there are no divisive figures to make the outcome all the more fascinating. It is clarifying the genuine and genuine relationship between working capital administration and benefit of recorded Ghanaian assembling firms.

3.6 Reliability of data

Unwavering quality means when the same information is utilized by other specialist they would acquire the same results on the same exploration. The exploration ought not to be subject inclination, eyewitness predisposition and it ought not to have any subject lapse (Saunders & Lewis, 2000, pp.100-101). All the information assembled from the reviewed monetary reports of the organizations was broke down utilizing

stata 12.0 product. The examination and information are neither subject inclination nor eyewitness predisposition. It is additionally unrealistic to change the estimations of diverse records in money related proclamations. Subsequently if the exploration will be rehashed by another person then it will give the same result.

3.7 Model Specification

From the writing survey, various working capital variables have been estimated to influence firm productivity. With a specific end goal to analyze the impact of WC administration on firm productivity, the accompanying capacity is determined by the study;

WC includes; the number of days accounts receivables (AR), the number of days accounts payable (AP), the number of days of stock (INV) and cash change cycle (CCC). The current ratio (CR), leverage (GEAR) and firm (SIZE) are the control variables of the study. Equation(1) communicates the Return on Assets (ROA) as a component of the number of days of accounts receivables, the number of days of accounts payables, the number of days of stock, cash change cycle and control variables. To evaluate the relationship between working capital management and benefit, each of the four working capital variables were utilized together with the three controls as logical variables while return on total resources as the subordinate variable. This outcome in the accompanying mathematical statement beneath:

$$WC = AR, AP, INV \text{ and } CCC$$

From the mathematical statement, $i = 1, 2 \dots 10$, $t = 2007, 2008, 2009, 2010, 2011, 2012, 2013$ is inconspicuous heterogeneity (individual impact) which is particular for every firm and is the blunder term. To evaluate the above mathematical statements the study depended on the multivariate relapse method. It was normal that, AR, AP, INV

and GEAR will have a negative impact on firm productivity while CR and SIZE is relied upon to influence benefit absolutely.

3.7.1 Return on Assets (ROA)

The study utilized profit for resources (ROA) as the needy variable. ROA was a superior measure since it relates the gainfulness of the business to the benefit base. There are numerous methods for overseeing profit for resources however, on a basic level; key levers are, obviously, benefit increment and resources decrease. The recent has turned out to be more vital to numerous organizations as the previous turns out to be trickier. ROA is measured by isolating net pay by aggregate resources.

3.7.2 Average collection Period (AR)

This symbolizes the normal number of days it takes the organization to assemble installments from clients. It is ascertained by isolating record receivable by deals and reproducing the outcomes 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 utilized as a far reaching measure of working capital as it demonstrates the time slack between use for the buys of crude materials and the gathering of offers of completed merchandise. The more drawn out the cycle,

the bigger the stores hindered in working capital. Cash change cycle is measured by including the quantity of days of record receivables and the quantity of days of stock turnover and deducting the quantity of days of records payable.

3.7.6 Current Ratio

It is another control variable the measures liquidity and it is figured by isolating 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 information for the study is essentially auxiliary in nature and was gathered from the evaluated money related reports of organizations distributed information was gathered on eleven (11) recorded studying so as to assemble firms yearly budgetary reports. The information compasses the period 2007-2013 giving an aggregate of 77 information focuses.

3.9 Data Analysis

The study depended on Pearson's connection and multivariate relapse strategy to break down the relationship between working capital administration and gainfulness. Stata 12.0 was the primary programming used to gauge the outcomes.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF RESULTS

4.0 Introduction

The discoveries from the study are displayed and examined in this section. The outcomes will be broke down under four segments. The primary area manages the depiction of the variables of the study. The study investigates the distinct measurements of the variables in the second segment. This is trailed by connection investigation in the middle of variables lastly the last area of this part exhibits the aftereffects of the relapse of gainfulness on working capital variables.

4.1 Data Description

The study uses return on resources (ROA) as the needy variables since it is a moderately decent pointer for gainfulness and the most well-known measure of productivity utilized by most studies. Four working capital variables would be considered and these are number of days account receivables (AR), number of days account payable (AP), number of days of inventory/stock and cash conversion cycle (CCC) were utilized as free variables. Others like current ratio (CR), leverage (GEAR) and firm size measured by common logarithm were employed as control variables. The portrayal and estimation of the variables are displayed in Table 4.1.

Table 4.1: Description and measurements of variables

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

4.2 Descriptive Statistics

From Table 4.2 beneath it could be seen that Return on aggregate resources grew 0.31% averagely with a standard deviation of 0.063. The maximum development estimation of ROA is 12.8% and minimum development valve of - 12.2% was recorded. All things being equal, firms gather their receivables following 61 days while they pay suppliers in 152 days. The minimum days manufacturing firms can use to gather its receivables are 50 days and 72 days as maximum. The most extreme day for firms to pay it supplies is 198 days and 106 days as least days to pay suppliers. Be that as it may, one of the manufacturing firms had the capacity to gather its receivables following 12 days which was exceptionally momentous while another firm could just pay its suppliers following 556 days. By and large, manufacturing firms keeps inventories for 125 days. The base and greatest days to keep up supply of manufacturing firms are 107 days and 142 days respectfully. The normal cash conversion cycle (CCC) is 36 days, suggesting that manufacturing firm's turnover their stocks on a normal of 10.1 times each year. The mean estimation of the current ratio (CR) is 2.3 which infer that the organizations have enough current assets that can

without much of a stretch be changed over to cash to reimburse current liabilities. In this manner, the manufacturing firms for the study by and large are exceptionally fluid and use debt to finance business than equity with mean value of 19.0. The mean worth for manufacturing firms' size is 7.4.

Table 4.2: Descriptive Statistics of Variables

Variables	Mean	Standard Deviation	Minimum	Maximum
ROA	0.0031426	0.0626233	-0.1215825	0.1278677
AR	61.37236	5.642236	50.13488	72.60985
AP	151.7193	23.14321	105.6256	197.813
INV	124.5517	8.597481	107.4284	141.6751
CCC	35.98923	53.24307	-70.05354	142.032
CR	2.13235	0.2423699	1.649629	2.615072
GEAR	19.0804	15.73387	-12.25632	50.41712
SIZE	7.42925	0.0784863	7.272931	7.585569

Source: Estimated from Stata 12.0

4.3 Correlation Analysis

The relationship between the variables of the study is displayed in this segment. The connection between ROA and the autonomous variables is of enthusiasm since it gives proof of the relationship between the variables.

Table 4.3 shows connection for the variables used to survey the effect of working capital management on productivity, measured by profit for aggregate resources. ROA is adversely associated with AR, AP and decidedly connects with INV and cash conversion cycle. An increment in the times of account receivables and account payables will diminish the arrival on total assets fundamentally whiles an increment in

inventory/stock and cash will expand return on total assets. For the control variables, ROA relates positively with current Ratio (CR) and firm size, and adversely associates with GEAR. The outcomes from the connection demonstrates that lessening in the number of days accounts receivables (AR), number of days accounts payable (AP) and number of days of inventory/stock promptly builds firm profit. Increment in real cash conversion cycle promptly is likewise anticipated to ascent in firm profit. Be that as it may, the outcomes from the relationship examination must be investigated with alert on the grounds that it doesn't think seriously about the impact of other logical variables. Therefore, a multivariable relapse investigation is depended upon to assess the models set forward in chapter three.

Table 4.3 Variables Correlation matrix

	ROA	AR	AP	INV	CCC	CR	GEAR	SIZE
ROA	1							
AR	-0.2574	1						
AP	-0.8852	0.3504	1					
INV	0.1626	0.2909	-0.1214	1				
CCC	0.9531	-0.105	-0.9026	0.365	1			
CR	0.214	0.0203	-0.3078	0.0181	0.1914	1		
GEAR	-0.0077	0.0072	0.1706	0.1862	-0.0394	-0.0519	1	
SIZE	0.3478	-0.4943	-0.3559	-0.2825	0.2142	-0.0489	0.0457	1

Source: Estimated from Stata 12.0

4.4 Multivariable Regression Analysis

The results from Table 4.3 indicate a multivariable regression analysis of the model in chapter three. Table 4.3 below shows that there is a significant difference between working capital and firms profit at 99% confidence interval. Since F-value of 526.68 is greater than F-table of 5.75 we reject the null hypothesis stated in chapter 1 and conclude that there is a significant difference between working capital and firm's profitability. Table 4.3 also indicate that there is a positive relationship between number of days accounts receivables, number of days account payable, number of days inventory and firm's profitability at 99% confidence interval. The coefficients values for AR AP and INV are -0.0021 0.0014 and -0.0017 respectively. Though AR and INV are correctly signed yet they have a positive relationship on firm's profitability when they were tested statistically. R-square of 0.98 was obtained. This means that 0.98 of the model is explained by the independent variables. It can be observed that gearing is insignificant to firm's profit (0.48) whiles current ratio and size of the firm are significant with the firm's profitability.

Table 4.4 Regressions of Profitability on Working Capital Variables

ROA	Coefficient	Standard Deviation	T-test	P-Values	99% Confidence Interval	
					Minimum	Maximum
AR	-0.002	0.000	-8.11	0.00	-0.003	-0.001
AP	0.001	0.000	8.30	0.00	0.001	0.002
INV	-0.002	0.000	-10.97	0.00	-0.002	-0.001
CCC	0.002	0.000	24.96	0.00	0.002	0.002
CR	0.028	0.005	5.64	0.00	0.015	0.041
Gear	0.000	0.000	0.48	0.63	0.000	0.000
Size	0.054	0.016	3.29	0.00	0.010	0.097
Constant	-0.388	0.137	-2.83	0.01	-0.751	-0.025
	F-Test =526.68	R-Square = 0.9816				

Source: Estimated from Stata 12.0

4.4.1 Discussion of the results

The discoveries substantiated the case that arrival on resources is lessened by stretching the quantity of days of accounts receivable and the quantity of day's accounts payable. This finding is predictable with the outcome found by Delof (2003) for expansive Belgian firms, accentuating the significance of working capital administration to the firm. Unwinding the due date for installment of obligation by clients, in spite of the fact that may prompt an ascent deals, it influences benefit contrarily. Additionally, longer days of accounts receivables is an evidence that the firm is not able to gather its obligations on time, this tends to prompt income issues as the firm might not have enough money to settle it fleeting obligation commitments. Thusly, manufacturing firms which are not able to deal with their cash streams proficiently may encounter liquidity issue which might in the end influence profit.

The negative relationship in the middle of benefit and the quantity of days accounts receivable could likewise be clarified by the inclination of less productive firms to allow longer installment due dates to clients as a motivating force to build support.

The negative relationship found between the quantity of days of accounts payable could be ascribed to the reality of manufacturing firms taking longer periods to pay their obligation being considered as less financially sound by suppliers and thus in periods where there are supply challenges, less trustworthy firm may find it hard to get general supply of crude materials. At the point when this happens, generation may be influenced prompting profit decrease.

As expressed over, all the control variables of the study for the models is measurably critical at 1% with the exception of leverage. The immaterial coefficient for leverage variable may be clarified by the way that the measure of obligation utilized by the

firm contrasts much from the utilization of value in the chose manufacturing firms. The present proportion, which is the routine measure of liquidity, is critical and emphatically identified with productivity. The finding is like the one found by Vishnani and Shah (2007) for India.

Discoveries from studies were required to help directors in recognized zones where they may enhance the budgetary execution of their operation. The working capital needs of an association change after some time as its inward cash era changes.

4.5 Conclusion

The part exhibited and talked about the principle discoveries from the study. This was done utilizing elucidating measurements, Pearson's correlation examination and multivariable relapse investigation was employed. The outcomes from the study showed a negative relationship in the middle of gainfulness, the quantity of day's accounts receivables and the quantity of day's accounts payable. In any case, the study discovered positive relationship between the quantity of days of stock and the cash change period and productivity for the chose manufacturing firms in Ghana. Moreover, the study found that present proportion and the span of the firm influences profit emphatically.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter gives a general summary of findings, conclusions for the study and recommendations.

5.1 Summary of Major Findings

From the analysis it was found that:

Firms profit grew at 0.31% on the average with a variance of 0.063. This means that the average growth rate of manufacturing firms in Ghana is 0.31%, this can be done when the manufacturing firms are able to collect receivables in 2 months and pay suppliers in 5 months. The turnover of 10 times in a year by manufacturing firms in Ghana will contribute to the growth of .031%.

Current ratio of 2.3 was ascertained for the manufacturing firms, 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 are very liquid. Manufacturing firms in Ghana were using debt financing as a means of financing operations.

There is a relation between the manufacturing firm size and its profitability. The bigger the manufacturing firms the more profit it obtains and the reverse is true. Also profitability of firms is negatively correlated to accounts receivables and account payables but positively relates to inventory and cash. When manufacturing firms are able to collect more of its receivables and pay its suppliers then profit will increase keeping inventory in stock would also increase profitability if firms. Firm's profitability is positively related to current ratio and firm's size but negatively relates

to leverage. Meaning profitability is linked to liquidity of the firm and its size but relates otherwise with leverage. There exist a significant different working capital and firm profitability. Profitability has a positive relation with account receivables account payables and inventory.

5.2 Conclusions of the Study

The following conclusions were made from the study:

First, the study found that return on assets (profitability) is reduced by lengthening the number of days of accounts receivables. The negative relationship between profitability and the number of day's accounts receivables could be explained by the propensity of less profitable firms to grant longer payment deadlines to customers as an incentive to increase patronage. Secondly, the findings from the study show that firm profitability is reduced by a rise in the number of days account payable. With the number of day's accounts payable indicating 152 days on average, it means that firm's takes longer days (time) to pay their suppliers. Although, delaying payments to suppliers may be 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. Thirdly, the study found that the conventional measure of liquidity, current ratio is positively related to profitability. Thus, manufacturing firms which better manage their liquidity are likely to be more profitable. Finally, the study also shows 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

In view of the above conclusions, the accompanying suggestions are proposed. To start with, assembling firms ought to gadget arrangements went for guaranteeing that the quantity of days of record receivables is abbreviated keeping in mind the end goal to improve on their productivity levels. Assembling firms ought to along these lines put in components to help them in their obligation accumulations.

Furthermore, assembling firms ought to try to pay their obligation commitments on time keeping in mind the end goal to be trustworthy in this way abstaining from sending awful flags to the business which may influence their operations. This should be possible by guaranteeing that the organizations have enough fluid resources which can be changed over to money when the need emerges.

At long last, assembling firms ought to embrace procedures which will guarantee development of their organizations keeping in mind the end goal to end up focused subsequent to the study discovered an in number relationship between firm size and gainfulness.

5.4 Limitations of the Study and Suggestion for Further Studies

The restrictions distinguished from the study incorporate;

The specialist would have needed to cover all listed firms for the study, yet because of absence of complete information on a portion of the listed firms, just 11 organizations were picked. The specialist utilized ROA to gauge benefit. Be that as it may, there are a lot of measures of productivity, for example, Return on Investments, Net Profit Margin, Gross Operating Profit, and so on. In this way, further research ought to be led utilizing alternate measures of gainfulness with a specific end goal to investigate the relationship between working capital management and firms benefit.

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APPENDIX

COMPANY	YEAR	ROA	AR	AP	INV	CCC	CR	GEAR	SIZE
ALUWORKS	2007	-0.0978	59.5797	28.3523	122.4845	155.3863	0.9904	6.0037	7.7162
	2008	-0.0418	59.2797	109.0556	102.3348	60.9451	0.7250	2.1728	7.7568
	2009	-0.1344	31.6104	68.2244	87.0389	61.1051	0.4313	2.9754	7.5349
	2010	-0.1326	76.4314	40.9739	90.6729	123.8560	0.6371	1.0615	7.4008
	2011	-0.0643	41.3338	40.3895	56.3085	60.3318	0.7962	1.3166	7.6965
	2012	-0.0352	54.4697	85.9211	81.6032	62.2442	1.2222	2.4491	7.6962
	2013	-0.0118	33.6027	79.0755	92.0234	59.7039	0.9399	0.9343	7.7636
AFRICAN CHAMPION INDUSTRIES	2007	0.0179	31.4262	321.8983	67.8931	-130.6548	4.0135	0.8569	6.4909
	2008	-0.0789	123.4448	281.6446	41.9233	-102.8177	0.5547	0.4260	6.4784
	2009	-0.0522	136.3912	344.8813	38.6411	-96.2555	0.5538	0.5940	6.5964
	2010	-0.0312	153.6663	329.5777	28.2358	-43.8259	0.5616	0.7350	6.6499
	2011	-0.1228	182.2320	379.1431	63.8805	-62.9090	0.5009	0.9497	6.5743
	2012	-0.3466	121.6713	588.6446	90.9097	-389.7467	0.1969	3.1011	6.4710
	2013	-4.6402	138.1879	1648.7827	0.0000	-3855.7125	0.0358	-1.3285	5.6582

FANMILK	2007	0.2975	14.1581	125.8985	70.4755	18.8825	1.6236	0.5301	7.6135
	2008	0.1325	14.1183	124.0405	86.9266	36.5942	1.6705	0.5347	7.7407
	2009	0.2965	10.2590	135.4467	91.6391	38.7331	1.8940	0.4570	7.9163
	2010	0.2832	10.4497	106.0467	73.6077	34.7072	2.6745	0.3120	8.0161
	2011	0.2265	7.3982	122.2245	89.1546	38.4961	2.1979	0.3320	8.0385
	2012	0.2817	10.1160	112.9268	81.7863	38.3593	1.4307	0.5654	8.1679
	2013	0.2145	12.4075	105.9047	95.7716	61.3489	1.9656	0.3247	8.1429
CPC	2007	0.0063	182.8485	222.4004	128.4727	106.4298	1.5210	2.3489	7.6843
	2008	0.0070	108.5748	83.8059	168.1266	199.8527	3.3477	1.1598	7.7737
	2009	-0.1582	178.8429	276.1131	232.0989	87.2412	1.2837	6.8504	7.6584
	2010	-0.1096	29.4505	167.6750	66.6574	-68.8447	2.1847	2.3670	7.9249
	2011	-0.0354	73.3204	367.5771	215.5094	-62.7886	1.0132	9.1509	7.7789
	2012	-0.0432	69.3782	468.1734	255.6206	-131.4614	0.8003	1207.9102	7.7415
	2013	0.0719	109.4140	81.4840	168.6393	196.5694	0.9024	6.4483	7.7777
ARYTON	2007	0.1679	90.9896	50.7218	142.7612	201.6589	6.3667	0.1244	6.9769
DRUGS	2008	0.1698	71.0299	49.8762	220.9796	260.7004	6.5881	0.1206	7.0756

	2009	0.2238	99.0421	27.6226	139.6378	222.2952	9.8065	0.0838	7.1908
	2010	0.1384	150.3231	75.0121	222.7269	331.1706	6.2880	0.1304	7.0954
	2011	0.1474	128.8195	46.0791	151.2102	253.1061	6.6329	0.1426	7.3022
	2012	0.1145	129.5860	44.2302	182.8459	286.1004	6.9424	0.1253	7.3593
	2013	0.0146	128.0941	94.9122	178.1772	249.6075	4.3081	0.2096	7.3816
BENSO OIL PLANTATION	2007	0.0419	15.5017	15.3899	24.9351	28.0521	6.6343	130.6352	7.1178
	2008	0.2253	52.4392	28.4560	27.5139	59.0696	3.8521	0.0958	7.3136
	2009	0.0745	24.7263	23.0281	66.1930	69.6786	3.4758	0.0916	7.1932
	2010	0.1117	20.2610	24.8998	38.5391	38.0868	3.6374	0.0949	7.2870
	2011	0.3042	12.1258	20.2479	45.5693	43.8805	6.6621	0.0672	7.5415
	2012	0.3030	13.1650	19.5377	57.6018	57.8163	7.6849	0.0673	7.6111
	2013	0.1264	13.4617	14.4348	54.9780	56.3788	6.8096	0.0519	7.5495
CAMELOT GHANA	2007	-0.0077	16.6621	107.2808	108.1265	55.2522	1.0646	10.7535	6.2709
	2008	0.0246	12.5941	124.4531	198.5388	138.1809	0.7736	7.0686	6.3115
	2009	0.0316	63.8028	224.7367	272.6159	258.1618	0.9425	6.8101	6.4115
	2010	0.0459	57.3951	85.6933	79.2275	84.2989	0.5364	5.0461	6.5784

	2011	0.0513	76.4138	123.5603	149.9192	166.5544	0.5664	4.7686	6.5430
	2012	0.0680	108.4825	185.0270	153.8205	161.1209	0.8417	1.8546	6.5621
	2013	0.0719	112.3188	185.0638	155.5757	82.8306	1.2155	1.5456	6.5853
PZ CUSSENS	2007	0.1159	65.3441	167.7993	223.8226	171.8143	1.8811	0.6372	7.4643
	2008	0.0915	59.8749	139.6995	236.4545	198.9717	1.7054	0.8292	7.6312
	2009	0.0218	46.3855	152.5817	201.5518	87.4717	1.7335	0.7919	7.6498
	2010	0.0911	0.9347	132.3014	154.4270	67.3182	2.0223	0.6592	7.7388
	2011	0.1109	1.9324	137.1637	197.5007	108.4443	1.8964	0.8254	7.8208
	2012	0.0123	2.1310	177.7860	150.0035	35.0608	1.6441	0.9880	7.9155
	2013	0.1078	119.0099	169.5372	148.2521	158.9911	1.9029	0.8604	7.9811
GUINNESS GHANA	2007	0.1138	46.2496	48.3063	109.3100	125.5093	1.2929	0.9164	7.9712
	2008	0.0881	41.4636	64.6565	147.0048	149.2775	0.8394	1.4998	8.1382
	2009	0.0230	39.5897	90.1061	74.5542	50.7328	0.4650	2.6876	8.3031
	2010	-0.0235	24.9898	95.7730	73.4645	32.4888	0.4631	3.3638	8.3149
	2011	0.0026	8.4208	78.3459	59.0846	12.1591	0.3253	3.4684	8.3879
	2012	0.1024	11.3014	92.8530	63.4502	13.4709	0.9844	0.7567	8.4659

	2013	0.0613	12.6311	64.2136	71.9621	38.8273	0.5596	0.9502	8.5065
UNILIVER GHANA	2007	0.1447	15.4765	71.1357	51.2393	10.4854	1.5635	0.6598	8.1405
	2008	0.1867	19.1850	135.7214	111.3920	25.8322	1.2822	1.1998	8.2064
	2009	-0.0439	14.9642	115.9014	63.8711	-16.8858	1.0644	0.7177	8.2055
	2010	0.1885	45.7408	143.6034	40.4339	-20.1445	1.0838	0.7846	8.2535
	2011	0.2018	1.8830	141.3471	65.6901	-36.7093	1.2309	1.5964	8.3784
	2012	0.0838	4.3158	175.1641	54.9302	-75.1429	0.8484	3.2883	8.4505
	2013	0.0878	71.6068	201.3686	75.4175	-0.4205	0.8047	4.8881	8.5097
STARWIN PRODUCTS	2007	0.0080	104.0551	86.7030	315.3489	378.0615	1.5091	0.5028	6.3089
	2008	-0.0096	91.3033	93.8939	243.6940	287.6517	1.4155	0.7258	6.3924
	2009	-0.0146	66.7962	38.2647	256.7748	303.9256	1.0839	1.0989	6.4893
	2010	0.0222	65.0606	58.1771	280.9252	317.6717	1.4687	1.0073	6.5754
	2011	0.1279	106.2354	82.1632	120.1496	178.4090	1.5355	0.5933	6.6280
	2012	0.0673	85.6779	154.9023	279.6545	293.4095	1.5559	0.7515	6.6820
	2013	0.1244	81.8156	156.3717	260.1909	274.7182	1.7300	0.7154	6.8247

Multivariable Regression Result from Stata 12.0

```
. regress roa ar ap inv ccc cr gear size, level(99)
```

Source	SS	df	MS	Number of obs =	77
Model	22.5280306	7	3.21829009	F(7, 69) =	526.68
Residual	.421624386	69	.006110498	Prob > F =	0.0000
				R-squared =	0.9816
				Adj R-squared =	0.9798
Total	22.949655	76	.301969145	Root MSE =	.07817

roa	Coef.	Std. Err.	t	P> t	[99% Conf. Interval]	
ar	-.0020738	.0002557	-8.11	0.000	-.0027511	-.0013965
ap	.0013984	.0001684	8.30	0.000	.0009522	.0018445
inv	-.0017081	.0001557	-10.97	0.000	-.0021205	-.0012957
ccc	.0017066	.0000684	24.96	0.000	.0015255	.0018877
cr	.0276883	.0049054	5.64	0.000	.0146939	.0406827
gear	.000035	.0000726	0.48	0.632	-.0001574	.0002274
size	.0535528	.0162692	3.29	0.002	.010456	.0966496
_cons	-.3879752	.1371082	-2.83	0.006	-.7511717	-.0247786