

UNIVERSITY OF CAPE COAST

EFFECT OF WORKING CAPITAL MANAGEMENT  
ON THE FINANCIAL PERFORMANCE OF  
PHARMACEUTICAL COMPANIES IN GHANA

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PERFORMANCE OF PHARMACEUTICAL COMPANIES IN GHANA

BY

BERNARD ABABIO AFFOH

Dissertation submitted to the Department of School of Business of the College of Distance Education, University of Cape Coast, in partial fulfillment of the requirements for the award of Master of Business Administration Degree in Finance.

APRIL 2016

DECLARATION

**Candidate's Declaration**

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature .....Date.....

Name.....

**Supervisors' Declaration**

We hereby declare that the preparation and preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Principal Supervisor's Signature .....Date .....

Name .....

Co- Supervisor's Signature.....Date.....

Name .....

ABSTRACT

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## DEDICATION

To our beloved parents and guidance who together laid a firm foundation for our academic take-off; we dedicate this work to you all.



## ABSTRACT

Working capital management plays a vital role in improving the financial performance of companies. The purpose of the study is to analyze the effects of working capital management on the financial performance of pharmaceutical companies in Ghana. For this reason Pearson correlation and regression were used to analyze the secondary data in the form of annual financial report were obtained from the pharmaceutical companies for a period of eleven years (2005-2015). The study measured financial performance using Return on equity and Return on assets. The study used Rate of stock turnover, Average collection period, Current ratio, Firm size and Average payment period as the independent variable. The study found negative relationship with average collection period, firm size and rate of stock turnover and found a positive relation with current ratio and average payment period. However, firm size, average collection period were statistically significant. The results indicate that there was 22.5% and 9.8% of the variation in Return on assets (ROA) and Return on equity (ROE) as the dependent variable explained by the independent variables of Rate of stock turnover (ROST), Average collection period(ACP), Current ratio (CR), Firm size (FS) and Average payment period(APP). Based on the results from the study it concludes shareholders can create value for their wealth by reducing average collection period and delay payment for creditors. Managers of pharmaceutical companies must employ staffs with qualified expertise and experience to manage their working capital to improve their liquidity level and operations.

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the study

Pharmaceutical industry in Ghana plays a vital role in manufacturing, importing and distributing of quality and affordable drugs aimed at improving the health care delivery system in the country. Government has provided incentive to boost the pharmaceutical industry such as exemption in payment of custom duty on all raw and packaging materials for the local production of pharmaceuticals. Local produced pharmaceuticals are zero rated under the Value Added Tax (VAT) law, despite incentives from Government; the industry faces several constraints such as low capacity utilization, undercapitalization, weak financial base and high cost of inputs.

These challenges have necessitated the management of working capital to improve the financial performance of the pharmaceutical industry; however, the economic theory of firms requires that firm's resources should be utilized efficiently in order to achieve economic success. Firm's resources are broadly classified into two, long term assets (non-current assets) and short term assets (current assets).

Working capital management refers to investment in current assets and current liabilities which are liquidated within one year or less and is therefore crucial for firm's day to day operations (Kesimli & Gunay, 2011). The components of working capital include cash, marketable securities, account receivables, inventories and account payable. Firms fail mostly because they are not able to meet their working capital needs; consequently, sound working capital management is a requisite for firm's survival (Deloof, 2003).

Working capital is very important to a firm's survival which is setting up and requires focus, adequate planning and management, since resource available to the firms is scarce, management of working capital plays a vital role in the achievement of profitability and overall performance of such firm.

## **1.2 STATEMENT OF THE PROBLEM**

Company financial performance is very essential to management; a financially stable company attracts investors both locally and abroad. It is also very easy for a financial stable company to obtain loans for development hence its growth. Well managed working capital is crucial to the running of a healthy and successful business. Good working capital ensures that the cash available to a business always exceed its current liabilities.

Stephen (2012) documents evidence that most business organizations do not hold the right amount of stocks, debtors and cash; as a result of which the firms are unable to meet their maturing short term obligations and its upcoming operational needs. Similarly, insufficient working capital means that a firm is unable to undertake expansion projects and increase its sales, therefore limiting the growth and financial performance of the business. These are particularly the symptoms revealed by the Ghana pharmaceutical firms in the recent times, as majority of pharmaceutical firms in Ghana have exhibited dwindling returns as well as poor financial performance. Pharmaceutical companies handle 500-600 types of products that include huge raw materials coupled with the high purity of items required making working capital management difficult.

Moreover, Report from the Ghana Standard Board (2015) showed that drug manufactures in Ghana are faced with several constraints, including low capacity utilization, under capitalization, a weak financial base, high production costs as a result of the high cost of inputs and unstable

demand among others. Other research have focused on how reduction of working capital improves a firm's profitability (Shin & Soenen, 1998; Deloof, 2008; Raheman & Nasr, 2007; Samiloglu, 2008; Zariyawati, 2009; Falope & Ajilore, 2009; Dong & Su, 2010; Sharma & Kumar, 2011). However, the inefficient management of working capital components in the pharmaceutical companies in Ghana and also no known studies have focus their attention on working capital management and its effects on financial performance and this constitute the problem of the study.

In summary, working capital management is a frequent area of research in finance and accounting but very little research have been done on pharmaceutical firms, most of these studies concentrated on a single working capital component and the study are mostly from the developed economy, where the market mechanisms and the business environment significantly differ from Ghana. Therefore, this study will examine the effect of working capital management on the financial performance of pharmaceutical companies in Ghana.

### **1.3 Purpose of the Study**

#### **1.3.1 General Purpose of the Study**

The purpose of this study is to determine the effects of working capital management on the financial performance of listed pharmaceutical companies in Ghana.

#### **1.3.2 Research Objectives**

- Analyze the effect of average collection period on the financial performance of pharmaceutical firms in Ghana.



- Examine the impact of rate of stock turnover on the financial performance of pharmaceutical firms in Ghana.
- Assess the effect of average payment period on the financial performance of the pharmaceutical firms in Ghana.
- Test the effect of firm size on the financial performance of pharmaceutical firms in Ghana.
- Examine the effect of current ratio on the financial performance of pharmaceutical firms in Ghana.

#### **1.4 Research Hypotheses**

In line with the objectives of the study, the following hypotheses have been formulated:

H<sub>01</sub>: Average collection period has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>11</sub>: Average collection period has a significant effect on the financial performance of pharmaceutical companies in Ghana

H<sub>02</sub>: Average payment period has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>12</sub>: Average payment period has a significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>03</sub>: Rate of stock turnover has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>13</sub>: Rate of stock turnover has a significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>04</sub>: Firm size has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>14</sub>: Firm size has a significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>05</sub>: Current ratio has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>15</sub>: Current ratio has a significant effect on the financial performance of pharmaceutical companies in Ghana.

### **1.5 Significance of the Study**

The critical role of working capital management is playing in the short-term liquidity position and the recent crises of credit and liquidity make this study a necessity. Therefore, this study is significant in revealing the effect of working capital components on the financial performance of pharmaceutical companies in Ghana. The study finding is expected to be of useful benefit to Shareholders (as owners), Management, Creditors, Researchers and Regulators or policy makers of pharmaceutical companies in Ghana.

### **1.6 Delimitations**

The research is delimited to study the effects of working capital components on the financial performance of pharmaceutical companies in Ghana. It will have help explore the study if the research had also recognized other pharmaceutical companies not listed on the Ghana stock exchange. The sampling units of this research is delimited to 37 pharmaceutical in Ghana,

however, the sampling size is delimited to ten(10) pharmaceutical companies of which three(3) are listed on the Ghana stock exchange and remaining seven(7) are unlisted. The research method is delimited to quantitative method with descriptive and inferential statistics.

### **1.7 Limitations**

The findings of this research is limited to only ten (10) pharmaceutical companies of which three(3) are listed on the Ghana Stock Exchange and seven(7) of the remaining ten are not listed because of lack of secondary data from pharmaceutical companies not listed on Ghana Stock Exchange.

### **1.8 Organization of study**

The study will be structured into five chapters as follow. Chapter one represents the introduction chapter which comprises; background of the study, statement of the problem, objectives of the study, research questions/hypothesis, significance of the study and finally the scope and organization of the study. Chapter Two reviews both theoretical and empirical literature on Working Capital Management and Financial Performance. Chapter Three also presents methodology of the study. It includes the study design, population and sampling, data collection methods, data collection procedures, and data analysis. Chapter four then presents findings and interpretations. It also discusses the findings relative to the literature. Chapter Five finally presents summary, conclusions and recommendations based on the study. The limitations and recommendations for further studies were also included in this chapter.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

The previous chapter focused on the background of the study, however, this chapter review relevant literature on working capital components on the financial performance. The literature review is presented as follows: section 2.2 looks at the theoretical literature; section 2.3 focuses on empirical literature and 2.5 looks at summary

#### 2.2 Theoretical Literature Review

This study focused on three theories: working capital theory, transaction theory and agency theory.

##### 2.2.1 Working Capital theory

The theory suggests that there is no time difference between when costs are incurred and when revenue is earned, this assumption is true under perfectly functioning financial markets (Chan, 2010). However, this assumption fails to capture the effects of financial constraints on the dynamic behaviour of the firm. Working capital theory of a firm that captures the effects of financial constraints on the behaviour of the firm that the standard theory of the firm would otherwise not capture (Chan, 2010).

The working capital theory assumes the dynamics model is easily tractable to a static solution, the model predicts that under financial constraints, firms would exhibit counter cyclical investment behaviour. Furthermore constrained particularly during times when there are positive price shocks and as such, this has a large implication for growth (Chan, 2010).

The theory asserts that properly accounting for working capital and internal finance changes the predictions for the firm behaviour, especially those concerning the response to demand shocks. Under financial constraints, the reallocation of the financial resources between factors in response to shocks causes investment to be countercyclical. When current demand is high, constrained firms forgo investment to allocate scarce resources towards current production. When demand is low, firms produce less and have lower costs, relaxing the liquidity constraint and enabling them to allocate more resources to investment (Chan, 2010).

Efficient management of working capital components (inventories, debtors, cash and creditors) can improve the financial performance of the pharmaceutical industry in Ghana. Working capital is a managerial activity that managers must effectively and efficiently monitor and managed so as to maximize shareholders wealth and improve financial performance of the industry (Stephens & Bartunek, 1997, Dierks & Partel, 1997).

Based on working capital theory, it is necessary for firms to invest in working capital, finance working capital, monitor the factors that influence working capital, manage cash, account receivables, inventories, account payables and cash conversion cycle, measure and analyze performance to ensure that the long term non-current assets effectively and efficiently utilized. (Angelique Nadia, 2000).

### **2.2.2 Stakeholders Theory**

The theory was developed by (Smith, 1776) which refers to a group of constituents who have legitimate claim on the firm, this legitimacy is established through the existence of an exchange relationship. Stakeholders include stockholders, creditors, managers, employees, customers, suppliers, local community and the general public.

These groups can each be seen as supplying the firms with its critical resources (contributions) and in exchange each expects its interests to be satisfied (by inducements). Stockholders provide the firm with capital and in exchange, they expect the firm to maximize the risk-adjusted return on their investment. Creditors provide the firm with finance to and in exchange expect their loans to be repaid on schedule. Managers and employees provide the firm with time, skills and human capital commitments, in exchange for fair income and adequate working conditions. Customers supply the firm with revenues and expect value for money in exchange. Suppliers provide the firm with inputs and seek fair prices and dependable buyers in exchange. Local communities provide the firm with locations, local infrastructure and favourable tax treatment. Corporate citizens are expected to benefit from enhanced quality of life (March and Simon 1958).

Financial performance metrics are important to all of the firm's core stakeholders, but they are incomplete and oversimplify the roles of, and utility received by, the various stakeholders involved in firm success (Barney, 2011). Measuring financial performance through tangible and intangible factors that are important to the core stakeholders, as proposed herein, allows organizations to better understand what stakeholders want and need, both as a retrospective measure on how well firms have done and to help form a new idea about how the firm will perform in the future (Sachs & Riihli, 2011)

### **2.2.3 Trade off theory**

This theory was developed by (Myres, 1984), it focuses on cost and benefit analysis of debt predictions and there is optimal debt ratio which helps to maximize the value of the firm. The major benefit of debt is to reduce interest payment. Proponents of trade off approach are focusing their efforts on developing dynamic structural trade-off models.

Management of current assets involves trade-offs, either very high or very low of current assets can create financial impact on overall business performance (Kelly & McGowen, 2010).

The theory suggest that free cash flow problems can be controlled by increasing the stake of managers in the business or increasing debt in the capital structure thereby reducing free cash available to managers, trade off cannot be ignored when managing working capital since high leverage attracts higher cost of servicing debt, which can affect profitability and performance of the organization (Jasen, 1986).

### **2.2.2 Management of Working Capital Components**

The basic working capital components which should be managed efficiently includes the account receivables or debtors collection period, accounts payables or creditors payment period, inventory management, cash and cash equivalents and the operating cycle of a firm.

**Accounts Receivables Management:** This constitutes that management of firms' debtors. Accounts receivables period is the average time taken by credit customers to settle their accounts.

In working capital management, the receivables are a very important component of current assets and debtors collection period or receivables turnover in days is the average length of time required to convert the firm's receivables into cash (Raheman, Qayyum & AFza, 2011). They added that managerial efficiency in granting and controlling credit could be ascertained on the basis of receivables turnover in days. It would indicate the pattern of debtors on the basis of which liquidity of debtors could be ascertained. If the firm takes more time in collecting receivables, the profitability of the firm declines. To make a sensible decision about whether to trade with a company or not, information about the business is needed. The risk of bad debts can

be minimized if the creditworthiness of new customers is carefully assessed before credit is granted and if the creditworthiness of existing customers is reviewed on a regular basis. The effectiveness of trade receivables follow-up procedures used will also influence the overall level of receivables and the likelihood of bad debts arising (Van Horne & Wachowicz, 2004). The accounts receivables management policy formulated by senior managers should also take into account the administrative costs of debt collection, the ways in which the policy could be implemented effectively, and the costs and effects of easing credit (Van Horne & Wachowicz, 2004). It should balance the benefits to be gained from offering credit to customers against the costs of doing so. Longer credit terms may increase turnover, but will also increase the risk of bad debts. The cost of increased bad debts and the cost of any additional working capital required should be less than the increased profits generated by the higher turnover. In order to operate its trade receivables policy, a company needs to set up a credit analysis system, a credit control system and a trade receivables collection system.

Hence, accounts receivables management is measured by the accounts receivable turnover ratio. Debtors' turnover ratio also shows the effectiveness in collection of debts due. Generally, higher ratio is the indication of efficient management of liquidity. However, a firm should maintain a balance between the debtors outstanding and the amount of interest incurred on the blocked funds. The account receivables collection period is computed by dividing account receivables by net sales multiplied by 365 days (Raheman, et al., 2011).

**Accounts Payables Management:** The accounts or trade payables deferral period is the average time taken by a company to pay its trade payables, i.e. its suppliers (Uyar, 2009). Current liabilities include all obligations, which mature within a year such as creditors, bills payable,



accrued expenses, short-term bank loan, income tax liability and long-term debt excluding bank overdraft, all of which quickly mature in the current year.

Uyar, (2009) opined that, accounts payables or Creditors Turnover ratio is used to know how much credit time received by the firm from its trade creditors. Creditors' turnover ratio shows the breathing time received by the firm in terms of payment of credit purchase. Hence, the effectiveness lies in whether the firm is enjoying the actual credit period promised by suppliers. It is calculated by dividing the amount of purchases by creditors. Here it has been assumed that all of the purchases have been made as credit purchases. The account payables period is computed by dividing account payables by net purchases multiplied by 365 days (Raheman, et al., 2011).

**Inventory Management:** Inventory turnover in days is another important component of working capital management which is also called as inventory conversion period (Raheman, et al., 2011). According to them it is the average time required to convert materials into finished goods and then to sell those goods. This variable helps in evaluating the efficiency in inventory management policy of the firm. If the firms take more time in selling inventory which means inventories are not getting convert into sales, will decrease the profitability of firm. Inventory Turnover in Days is calculated using inventory divided by the cost of sales multiplied by 365 days.

### 2.2.5 Measurement of Financial Performance

According to Raheman et al., (2011) every business is most concerned with its profitability, they defined profitability as the ability to make profit from all the business activities of an organization, company, firm, or an enterprise. Additionally, it shows how efficiently the management can make profit by using all the resources available in the market. One of the most frequently used tools of financial ratio analysis is profitability ratios, which are used to determine the company's bottom line. However, profitability measures management efficiency in the use of organizational resources in adding value to the business.

Kurawa (2011) further explains that, turnover in working capital variables will result in profit. The faster the turnover, the more the profit will grow. If the level or volume of current assets continues to grow, the associated costs will also grow and this will reduce the volume of profit. He further asserts that profitability can best be measured in term of Return on Assets, Returns on Equity as well as Returns on Capital Employed. If there will be an unjustifiable over investment in current assets then this would negatively affect the rate of return on investment.

**Return on investment (ROI)**, the term investment may refer to total assets or net assets. The fund employed in net assets in is known as capital employed. Net assets equal net fixed assets plus current assets minus current liabilities excluding bank loan. The conventional approach of calculating return on investment is to divide profit after tax by investment. Investment refers to pool of funds supplied by shareholders and lenders, while pat represent residue income of shareholders (Rahmen et al., 2011).

**Return on Equity (ROE)**, common or ordinary shareholders are entitled to the residue profits; nevertheless, the net profit after tax represents their return (Rahmen et al., 2011). A return on shareholder's equity is calculated to see the profitability of owners' investment. The shareholders equity or net worth will include paid up share capital, share premium and reserves and surplus less accumulated losses. Net Worth can also be found by subtracting total liabilities from the total assets. The ROI is net profit after taxes divided by shareholders equity which is given by net worth (Rahmen et al., 2011).

**Return on Asset (ROA)**, return on Assets expresses the net income earned by a company as a percentage of the total assets available for use by that company. ROA suggests that companies with higher amounts of assets should be able to earn higher levels of income. ROA measures management ability to earn a return on the firm's resources (assets). The income amount used in this computation is income before the deduction of interest expense, since interest is the return to creditors for the resources that they provide to the firm. The resulting adjusted income amount is thereby the income before any distribution to those who provided funds to the company. ROA is computed by dividing net income plus interest expense by the company's average investment in asset during the year (Pandey, 2005).

## **2.4 Review of Empirical Studies on Working Capital Management**

In view of the significance of working capital management in realizing optimal working capital position capable of striking a trade-off between liquidity and profitability, several empirical studies have been conducted in different countries using different industry. However, the

findings from the studies are mixed and inconclusive. This, calls for further researches on the subject matter like the present studies

Ademola (2014) conducted a research on working capital management and profitability of selected listed manufacturing companies in Nigeria using secondary data from 2002 to 2011. The results shows that cash conversion cycle and profitability have a positive relationship while debtors collection, creditors payment and stock conversion periods are negatively related to profitability. The study employed descriptive statistics, multiple regression and correlation to analyze the data collected from the annual reports of the sampled manufacturing companies.

Akoto, Awunyo-Victor and Angmor (2013) analyzed the relationship between working capital management practices and profitability of listed manufacturing firms in Ghana. The study used panel data methodology and regression analysis, and collected secondary data from thirteen listed manufacturing firms from period of 2005- 2009. The results showed a significant negative relationship between profitability and Account receivable days. However, the cash conversion cycle, current ratio, firm size and current assets turnover significantly positively influence profitability. They concluded that managers can create value for their shareholders by creating incentives to reduce their account receivable to 30days.

Omega, Maniagi, Musiega and Makori (2013) examined the relationships between working capital management and corporate performance of manufacturing firms listed on the Nairobi securities exchange. The study sampled 20 manufacturing companies for five years period (2007-2011). The results showed that Average collection period, cash conversion cycle were significant at 95% and were negatively related to return on equity.

Makori and Jagongo (2013) carried out a research on working capital management on the profitability of manufacturing and construction firms listed on Nairobi Stock Exchange. The study used secondary data from five manufacturing and construction companies listed on the Nairobi Stock exchange in Kenya, the data obtained were analyzed by Pearson correlation and ordinary least square. The results from the study reveal a negative relationship between profitability and, account receivable period, cash conversion cycle, while positive relationship between profitability and inventory period and accounts payable period.

Haresh, Barot (2012) investigated the effects of working capital management on profitability performance of pharmaceutical companies listed on National Stock Exchange of India. The study used secondary data from financial reports from 2005 to 2010, SPSS packaged software was used to analyze the data collected. The results show a positive relationship between account payable and profitability while accounts receivable, inventory turnover and current ratio shows a negative relationship. It concluded that working capital should be managed in more efficient ways to increase profitability of the firm.

Muhammed, Sabo et.al.(2015) examined the impact of working capital management on corporate profitability of seven firms listed on the Nigeria Stock Exchange for a period of five years (2008-2012). Financial reports from sampled firms were used for the study. The study used Descriptive and GLS regression analysis to analyze the data. They found a positive relationship among Average collection Period (ACP), Current ratio (CR) and the Size of the firm (LOGSIZE) with profitability and a negative relationship with Inventory turnover period (ITP), Average payment

period (APP). Their findings suggested that cash collected should be re-invested into short term investment to generate profits.

Deloof (2003), the results indicated a strong significant relationship between the measures of working capital and corporate profitability. Their findings suggest that managers can increase profitability by reducing the number of days of accounts receivable and inventories. The findings from these studies support the proposition that increase in profitability can be achieved by reducing number of day's accounts receivable and reducing inventories (Wang, 2002).

In a study of companies listed on the Karachi Stock Exchange, Raheman and Nasr (2007) use a sample of 94 firms for a period of 6 years (1999-2004) and investigated the effects of different variables of working capital management (Average Collection Period, Inventory Turnover in Days, Average Payment Period and the Cash Conversion Cycle) on Net Operating Profitability. The results of the study showed that there is a strong negative relationship between the variables of working capital management and companies' profitability. On the other hand, the results showed a positive relationship between the size of the company, measured by natural logarithm of sales, and profitability.

Raheman and Nasr (2007) studied the relationship between working capital management and corporate profitability for firms listed on Karachi Stock Exchange using static measure of liquidity and ongoing operating measure of working capital management during 1999-2004. They found a negative relation between working capital management measures and profitability.

Similar to Shin and Soenen (1998), Deloof (2003), results of this study show a strong negative relationship between components of the working capital management and firm profitability.

On the contrary, Sharma and Kumar (2011) found results which significantly depart from the various international studies conducted in different markets that working capital management and profitability is positively correlated in Indian companies. Their study reveals that inventory of number of days and number of day's accounts payable is negatively correlated with a firm's profitability, whereas number of days accounts receivables and cash conversion period exhibit a positive relationship with corporate profitability. In Kenya, David (2010) examined the impact of working capital management and firm profitability, the findings suggest that more profitable firms takes the shortest time to collect cash from their customers and high inventory levels reduce costs of possible interruptions in the production process and loss of business due to scarcity of products.

A study by Gill (2011) examined the factors the influence working capital requirement of Canadian manufacturing and service firms. The study used a sample of 166 Canadian firms listed on the Toronto stock exchange and applied correlational and non-experimental research design. The results indicate that overall, working capital requirement is positively correlated with operating cycle, return on assets, Tobin's q and industry but negatively correlated with firm size. This study provides evidence from firm specific in relation to working capital management.

Moreover, Alipour (2011) examined the relationship between working capital management and corporate profitability in Iran using a sample of 1063 year observation for companies listed in Tehran Stock Exchange for a period of 6 years (2001-2006). Cash conversion cycle was used as

a major tool of measuring working capital management efficiency. The results indicated that there is a significant negative relationship between cash conversion cycle, number of days accounts receivable and inventory turnover in days and corporate profitability and there is a direct significant relationship between number of days accounts of payable. The study therefore implied that managers can create value for their shareholders by decreasing accounts receivable, inventory and cash conversion cycle.

From Jordan, Hayajneh and Yassine (2011) studied the relationship between working capital management efficiency and profitability of Jordanian manufacturing firms using a sample of 53 companies listed on Amman Stock Exchange for a period of 7 years (2000-2006). The data were analyzed through the use of descriptive statistics, Pearson's correlation co-efficient, ordinary least squares (OLS) and two stage least square regression models. The study found a strong negative relationship between firm's profitability and average receivables collection period, average inventory conversion period, average payment period and cash conversion cycle. Consistently, the findings suggested that, the firms can improve their profitability by managing the various components of its working capital efficiently.

Agyemang and Asiedu (2013) examine the relationship between working capital management and profitability of listed manufacturing companies in Ghana. The reason for this research was to determine whether working capital management will influence the profitability of manufacturing firms. The study used secondary data from annual financial report of manufacturing companies listed on the Ghana Stock Exchange for five year period (2007-2011). Regression and correlation



analysis were used to analyze the data obtained. The results from the study revealed that inventory days, accounts payable and cash conversion cycle influence profitability.

Napompech (2012) investigated the impact of working capital management on profitability in Thailand using a sample of 255 companies for a period of 3 years (2007-2009). Regression analysis was used in the analysis and the results revealed a negative relationship between the gross operating profit and cash conversion cycle, receivables collection period, inventory conversion period and average payment period. Therefore managers can increase the profitability of their firms by shortening the cash conversion cycle, inventory conversion period and receivables collection period. However, the findings suggested that they cannot increase profitability by lengthening the payables deferral period.

Samilogli and Demiregunes (2008) used regression model to analyze data from sampled manufacturing firms listed on the Istanbul Stock Exchange listed manufacturing firms in Turkey for a period of ten years (1998-2007). The findings from the study reveal a negative relationship between accounts receivable period and profitability.

#### **2.4 Summary of Literature Review**

Two theories were considered in this chapter which is related to working capital components, they include working capital theory and stakeholder's theory. However, findings on empirical literature concentrated on the relationship between working capital management and firm's profitability. Most researchers' measured profitability by using return on equity, return on assets,

net profit, and gross profit. There is scarce research on the effect of working capital on financial performance of pharmaceutical companies; therefore this study seeks to bridge the gap by determining the effects of working capital components on the financial performance of pharmaceutical companies

## **CHAPTER THREE**

### **RESEARCH METHODS**

#### **3.1 INTRODUCTION**

The previous chapter identifies the theoretical and empirical review of works done by people in relation to working capital components. However, this chapter outlines the methodology that was adopted in studying the effects of working capital components on the financial performance of pharmaceutical companies in Ghana. The items discussed in this chapter include, 3.1 Introduction; 3.2 Research design; 3.3 Study area; 3.4 Population; 3.5 Sampling procedure; 3.6 Data collection instrument; 3.7 Data collection procedures; 3.8 Data processing and Analysis; 3.9 Chapter Summary

#### **3.2 RESEARCH DESIGN**

The study adopted an explanatory type of study with a quantitative approach to analyze collected data; the research design used cross sectional data to determine the effects of working capital management on the financial performance of pharmaceutical companies in Ghana. In addition Statistical Package for Social Science (SPSS) was used to get results.

#### **3.3 STUDY AREA**

The study area for this research is Greater Accra and Ghana stock Exchange website. The choice for this location was because most of the pharmaceutical companies can be found in Accra. The location was also influenced by the researcher's closeness to the sampled pharmaceutical companies necessary for the research.

### 3.4 POPULATION

The target population for this study is made of all pharmaceutical company in Ghana. There are thirty eight (37) pharmaceutical companies in Ghana, out of which three (3) are listed on the Ghana stock exchange; they include PZ Cussons, Starwin Ghana Ltd and Aryton drugs.

### 3.4 SAMPLE PROCEDURE

The study used purposive sampling for the three (3) listed pharmaceutical companies Starwin Ghana Ltd, PZ Cussons and Aryton Drugs and convenient sampling for seven (7) pharmaceutical companies not listed on the Ghana stock Exchange, which are M&G Ltd, Legray Chemical Ltd, PAM Pharmaceutical Ltd, Kinapharma Ltd, Letap Ltd, Danadams Ltd and Kama Ltd. The study was based on financial statements of sampled pharmaceutical companies registered in Ghana.

They include:

| COMPANY NAME   | YEAR OF INCORPORATION | YEAR OF LISTING |
|----------------|-----------------------|-----------------|
| PZ CUSSONS     | 1990                  | 2002            |
| AYRTON DRUGS   | 1965                  | 2006            |
| STARWIN        | 1988                  | 2002            |
| M & G LTD      | 1989                  | -               |
| KAMA LTD       | 1983                  | -               |
| DANADAMS LTD   | 2005                  | -               |
| LETAP LTD      | 1995                  | -               |
| KINAPHARMA LTD | 1996                  | -               |

|                     |      |   |
|---------------------|------|---|
| PAM PHARMACEUTICAL  | 1997 | - |
| LAGRAY CHEMICAL LTD | 2000 | - |

### **3.5 DATA COLLECTION PROCEDURES**

The study collected secondary data from ten pharmaceutical companies registered in Ghana, letters were sent to the company's offices of the sampled pharmaceutical companies which were not listed on the Ghana Stock Exchange, they include M&G Ltd, Legray Chemical Ltd, PAM Pharmaceutical Ltd, Kinapharma Ltd, Letap Ltd, Danadams Ltd and Kama Ltd to enable the researcher obtained copies of their annual financial reports. The researcher also obtained some of the annual financial reports from the companies website namely; PZ Cussons, Starwin and Ayrton drugs.

### **3.6 DATA PROCESSING AND ANALYSIS**

The study adopted descriptive and inferential statistical methods to analyze the data obtained from the financial statement of pharmaceutical companies through statistical software called Statistical Package for Social Sciences (SPSS) to determine the effects of working capital on the financial performance of listed pharmaceutical companies.

#### **3.6.1 Measurement of the Variables**

The study used descriptive statistics to summarize, arrange and present the data to facilitate interpretation of the results.

### 3.7.2 Dependent variables

The dependent variable in this study is financial performance and is measured by Return on Equity and Return on Assets which are computed as follows:

#### **Return on Equity (ROE):**

This ratio measures the return on all capital invested in an assets, the return on equity focus on the equity component of the investment. It relates to the earnings available for equity holders after debt interest cost have been deducted from profit and is computed as follows;

$$\text{ROE} = \frac{\text{Profit after tax}}{\text{Shareholders fund}} \times 100$$

#### **Return on Assets (ROA):**

This ratio shows how efficient a company utilizes its available assets to generate profit. It calculates the percentage of a company is earning against per cedi of assets. Other studies like Sharma and Kuma (2011) and Nazir and Afza (2009). The higher the return on assets the better performance and is computed as follows:

$$\text{Return on Assets} = \frac{\text{Profit after tax}}{\text{Total assets}} \times 100$$

### 3.7.3 Independent variable

The independent variables are the components of working capital which include; Receivable collection period, Account payable period, Rate of inventory turnover, Firm size and Current ratio; they are computed as follows:

#### Average collection Period

It measures the average number of days between sending an invoice and collecting payment from its customers. However, if average collection period is reduced then the firm will be more liquid. The study found out that profitability will increase if debtors collection period is reduced (Deloof, 2003). It is computed as follows:

$$\text{Average collection period} = \frac{\text{Average receivables}}{\text{Credit turnover}} \times 365$$

#### Accounts payment period

It measures the credit period enjoyed by the firm in paying suppliers and it includes sundry creditors and bills payable. However, it becomes an advantage to the company if it takes longer period to pay supplier since it can use the funds in other productive areas. It is computed as follows:

$$\text{Account Payable} = \frac{\text{Average Creditors}}{\text{Credit purchases}} \times 365$$

#### Rate of stock turnover

It measures the time period which stocks must be replenish as and when it runs out, this measure aids the company to efficiently manage its stocks in meeting the demands of customers. . However, over stocking may lead to cash being tied up to capital. It is computed as follows:

$$\text{Rate of inventory Turnover} = \frac{\text{Average stock} \times 365}{\text{Cost of sales}}$$

### **Current ratio**

It measures the number of times which current assets can cover its short and maturing debts as and when it falls due. However, a low current ratio shows that the firm's current assets cannot cover its maturing debts and it is computed as follows:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$

### **Firm size**

It measures the size of the firm by using natural logarithm of assets and this have in research of Samiloglu and Demirgunes (2008) and Sharma and Kumar (2011). It is computed as follows:

$$\text{Firm size} = \log \text{ of total assets}$$

## **3.8 MODEL DESCRIPTION**

The model uses Return on equity (ROE) and Return on assets (ROA) as dependent variables which are influenced by Average collection period (ACP), Rate of inventory turnover (ROST), Current ratio (CR), Firm size (FS) and Average payment period (APP) are the independent variables for the study. The general model is specifying below;

$$\text{ROE} = F(\text{RC}, \text{AP}, \text{ROST}, \text{CR}, \text{FS}, \text{APP})$$

$$\text{ROA} = F(\text{ACP}, \text{ROST}, \text{CR}, \text{FS}, \text{APP})$$



Where:

ROE= Return on Equity

ROA= Return on Equity

F= Functional notation

ACP= Average collection Period

ROST= Rate of stock turnover

CR= Current Ratio

FS= Firm size

APP= Average payment period

$$ROE_{it} = \alpha + \beta_0 + \beta_1 ACP_{it} + \beta_2 ROST_{it} + \beta_3 CR_{it} + \beta_4 FS_{it} + \beta_5 APP_{it} + E_{it}$$

$$ROA_{it} = \alpha + \beta_0 + \beta_1 ACP_{it} + \beta_2 ROST_{it} + \beta_3 CR_{it} + \beta_4 FS_{it} + \beta_5 APP_{it} + E_{it}$$

### 3.8 CHAPTER SUMMARY

This summary made use of quantitative analysis and employed a descriptive design. Financial Statements were obtained from the pharmaceutical companies in Ghana. The data collected was analyzed through the computation of variables employed and some statistical tools.

This chapter describes the research methodology taking into consideration the study setting, design population, sample and sampling technique as well as the data collection and analysis.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.1 Introduction

The previous chapter looked at the research method employed for the purpose of the study; this section will discuss and explain the findings gathered from pharmaceutical companies in Ghana. The purpose of the study is to determine the effect of working capital management on the financial performance of pharmaceutical companies in Ghana. The working capital variables which the study employed were; Rate of Stock turnover (ROSA), Average collection period (ACP), Current ratio (CR), Firm size (FS), Average payment period (APP) as the independent variables. The study selected Return on Equity (ROE) and Return on Assets (ROA) as the dependent variables to measure the financial performance of the pharmaceutical companies, Statistical Package for Social Science (SPSS) were used to analysis empirical results from quantitative data, as well as presenting data from descriptive and inferential statistics, correlation matrix and regression as statistical tools were used for the study.

#### 4.2 Data Analysis and Findings

The research aims at establishing the effect of working capital components on the financial performance of pharmaceutical companies in Ghana; however, secondary data of ten pharmaceutical companies were used for this analysis.

### 4.2.1 Descriptive statistics

The descriptive statistics shows the mean, standard deviation, minimum and maximum values in the Table 1 below;

**Table 4.1 Descriptive Statistics**

|      | N   | Minimum | Maximum | Mean    | Std Deviation |
|------|-----|---------|---------|---------|---------------|
| ROE  | 110 | 0.21    | 9.90    | 3.9038  | 1.74359       |
| ROA  | 110 | 0.26    | 29.65   | 7.7359  | 7.35323       |
| ROST | 110 | 10.89   | 79.23   | 44.9266 | 17.89987      |
| ACP  | 110 | 4.09    | 87.81   | 44.9044 | 22.82658      |
| CR   | 110 | 0.33    | 43.57   | 2.8564  | 4.86416       |
| FS   | 110 | 1.61    | 3.28    | 2.5011  | 0.31878       |
| APP  | 110 | 1.01    | 1.92    | 1.5681  | 0.24494       |

From the table ROE (Return on Equity), ROA (Return on Assets), ROST (Rate of stock turnover), ACP (Average collection period), CR (Current ratio), FS (Firm size), and APP (Average payment period).

Table 4.1 shows a return on equity (ROE) of ten pharmaceutical companies for eleven years period with a minimum return of 0.21% to a maximum of 9.90%, this indicate that for every one Ghana Cedis invested in the company shareholders will make a minimum return of 0.21% and earned a maximum of 9.90%, shareholders in the sector could earned an average return of 3.9% with a degree of risk of 1.7%.

Return on assets shows an average mean of 7.73% which has a minimum and maximum of 0.21% and 29.65% respectively, with a degree of risk of 7.35%. However, it takes the company a

minimum of 10.89 days and maximum of 79 days to turn stocks into sales, with an average period of 44.92 days and standard deviation of 17.89.

The Company allows an average credit period (ACP) of 44.90 days to its customers which can remain outstanding for a maximum of 87.81 days and minimum of 4.09 days, the degree of variability from standard deviation is 22.82. Based on the current ratio (CR) the company can cover its short term debts as and when they fall due on an average of 2.85, minimum of 0.33 and maximum of 3.57 times respectively with a standard deviation 4.86 times.

Similarly, firm size (FS) had a mean of 2.5, a minimum of 1.61 and a maximum of 3.28 with a standard deviation 0.31. Finally it takes the company an average of 1.01 days a maximum of 1.92 days to pay it suppliers with a degree of risk of 0.244.

**Table 2 Correlation Matrix of the Dependent and Independent Variables<sup>3</sup>**

| VARIABLES  | ROE                | ROST              | ACP                | CR                  | FS                | APP |
|--|--------------------|-------------------|--------------------|---------------------|-------------------|-----|
| ROE  | 1                  |                   |                    |                     |                   |     |
| ROST   | 0.090<br>(0.349)   | 1                 |                    |                     |                   |     |
| ACP  | -0.094<br>(0.330)  | -0.041<br>(0.674) | 1                  |                     |                   |     |
| CR   | -0.121<br>(0.207)  | 0.121<br>(0.209)  | 0.078<br>(0.420)   | 1                   |                   |     |
| FS   | -0.218*<br>(0.022) | -0.078<br>(0.417) | 0.315**<br>(0.001) | -0.303**<br>(0.001) | 1                 |     |
| APP  | 0.025<br>(0.798)   | -0.119<br>(0.214) | 0.100<br>(0.299)   | -0.185<br>(0.052)   | 0.195*<br>(0.041) | 1   |
| *. Correlation is significant at the 0.05 level (2-tailed).  |                    |                   |                    |                     |                   |     |
| **. Correlation is significant at the 0.01 level (2-tailed). |                    |                   |                    |                     |                   |     |

Table 2 shows a reported statistics for the correlation between Rate of stock turnover and Return on equity using data from ten pharmaceutical companies financial statement over eleven years period (2005-2015).

Based on the above table the Pearson correlation between rate of stock turnover and return on equity has a coefficient of 0.090 and p-value of 0.349 at an insignificant level at  $\alpha = 0.05$ . This implies that there is a weak positive relationship between them, since the p-value of 0.349 is greater than 0.05 we reject the null hypothesis which states that the rate of stock turnover has no significant effect on return on equity, the significant value is  $0.349 > 0.05$ .

The relationship between average collection period and return on equity was investigated and the results shows a coefficient of -0.094 and a p-value of 0.330, which shows that there is a weak negative correlation between them at an insignificant level of  $\alpha = 0.05$ , therefore we reject the null hypothesis since the sig value of 0.330 is greater than 0.05, which states that average collection has no significant effect on return on equity. The significant value is  $0.330 > 0.05$ .

The results shows that current ratio and return on equity have a very weak positive correlation coefficient of -0.121 and a p-value of 0.207, which indicates an insignificance level at  $\alpha = 0.05$ , therefore we reject the null hypothesis because the p-value of 0.207 is greater than 0.05 which states that current ratio has no significant effect on return on equity. The significant value is  $0.207 > 0.05$ .

The Pearson correlation between firm size and return on equity with a coefficient of -0.218 and a p –value 0.022, this indicate that there is a very weak negative correlation between them at a

significant level of  $\alpha = 0.05$ . We fail to reject the null hypothesis which states that firm size has no significant effect on return on equity.

Finally, there is a perfect positive correlation between average payment period and return on equity based on Pearson correlation coefficient of 0.025 and a p-value of 0.798 at a significant level of  $\alpha = 0.05$ , therefore we reject the null hypothesis which states that average payment period has no significant effect on return on equity.

**Table 3 Correlation Matrix of the Dependent and independent Variables**

| VARIABLES  | ROA                | ROST              | ACP                | CR                  | FS                | APP |
|--|--------------------|-------------------|--------------------|---------------------|-------------------|-----|
| ROA  | 1                  |                   |                    |                     |                   |     |
| ROST   | -0.165<br>(0.085)  | 1                 |                    |                     |                   |     |
| ACP  | -0.131<br>(0.171)  | -0.041<br>(0.674) | 1                  |                     |                   |     |
| CR   | 0.086<br>(0.373)   | 0.121<br>(0.209)  | 0.078<br>(0.420)   | 1                   |                   |     |
| FS   | 0.262**<br>(0.006) | -0.078<br>(0.417) | 0.315**<br>(0.001) | -0.303**<br>(0.001) | 1                 |     |
| APP  | 0.183<br>(0.056)   | -0.119<br>(0.214) | 0.100<br>(0.299)   | -0.185<br>(0.052)   | 0.195*<br>(0.041) | 1   |
| *. Correlation is significant at the 0.05 level (2-tailed).  |                    |                   |                    |                     |                   |     |
| **. Correlation is significant at the 0.01 level (2-tailed). |                    |                   |                    |                     |                   |     |

Table 3 shows a correlation between working capital management variables (rate of stock turnover, average collection period, current ratio, firm size and average payment period) and return on assets of pharmaceutical companies in Ghana. The correlation coefficient between rate

of stock turnover and return on assets is -0.165 and a p-value of 0.085 at an insignificance level of 5%, this indicate that there is weak negative relationship between them. The results from the analysis show that if stock turnover period reduces, financial performance of the pharmaceutical companies will improve positively. The results from the table shows that there is a negative correlation between average collection period and return on assets at a coefficient of -0.131 and a p-value of 0.171 which is not statistically significant at 5%. This indication suggests that if more debtors remain outstanding it results in a reduction in the financial performance of pharmaceutical industries.

The table shows a correlation coefficient between current ratio and return on assets of 0.086 and a p-value 0.373, which indicates a weak negative correlation between them at 5% level of significance. This result suggest that, pharmaceutical companies financial performance will reduce if they cannot meet their short and maturing debts as and when they fall due, but is not statistically significant.

Furthermore, the analysis between firm size and return assets shows a correlation coefficient of 0.262 and a p-value of 0.006 at significance level of 1% which indicates a positive relationship between them and it is statistically significant. This results shows financial performance will improve if the firm size increases.

Finally, the correlation coefficient of average payment period and return on assets is 0.183 and a p-value 0.056 at an insignificance level of 5%, this indicates a positive relationship between them. The result suggests that, funds meant to pay suppliers when delayed can be used for other productive activities to improve the financial performance of the pharmaceutical companies.

**Table 4 Multiple Linear Regression Dependent variable (ROE)**

| Variable          | Coefficient | t-Statistics | Prob  |
|-------------------|-------------|--------------|-------|
| C                 | 6.997       | 4.015        | 0.000 |
| ROST              | 0.010       | 1.059        | 0.292 |
| ACP               | 0.001       | 0.123        | 0.902 |
| CR                | -0.076      | -2.095       | 0.039 |
| FS                | -1.575      | -2.734       | 0.007 |
| APP               | 0.372       | 0.541        | 0.589 |
| R-square          | 0.098       |              |       |
| Adjusted R-square | 0.054       |              |       |
| F- statistics     | 2.248       |              |       |
| Prob(F-statistic) | 0.055       |              |       |

Significant@5%

From the table the  $R^2$  explains the amount of variation that exists in the dependent variable caused by the independent variables. The results indicate that there is 9.8% of the variation in Return on equity (ROE) as the dependent variable explained by the independent variables of Rate of stock turnover (ROST), Average collection period (ACP), Current ratio (CR), Firm size (FS) and Average payment period (APP). The remaining 90.2% of variation in return on assets is explained by residual. The Adjusted  $R^2$  of 5.4% explains the variation that is being explained by an adjustment in an independent variable in the regression model.

Based on the results, firm size has statistically significant effect on return on equity as [F (-2.734), 0.007 < 0.05], its positive sign indicates that an increase in firm size will increase financial performance (ROE). However, rate of stock turnover has a significant effect on



return on assets.

Moreover, current ratio has statistically significant effect on return on asset as [F (-2.095), 0.039<0.05], the results shows that an increase in current ratio will lead to an increase in return on equity. Therefore, current ratio has a significant effect on financial performance (ROE).

**Table 5 Multiple Linear Regressions Dependent variable (ROA)**

| Variable          | Coefficient | t-Statistics | Prob  |
|-------------------|-------------|--------------|-------|
| C                 | -16.978     | -2.493       | 0.014 |
| ROST              | -0.066      | -1.825       | 0.071 |
| ACP               | -0.097      | -3.244       | 0.002 |
| CR                | 0.423       | 2.985        | 0.004 |
| FS                | 9.151       | 4.064        | 0.000 |
| APP               | 5.056       | 1.883        | 0.062 |
| R-square          | 0.225       |              |       |
| Adjusted R-square | 0.187       |              |       |
| F- statistics     | 6.030       |              |       |
| Prob(F-statistic) | 0.000       |              |       |

Significant @ 5%

From the table the  $R^2$  explains the amount of variation that exists in the dependent variable caused by the independent variables. The results indicate that there is 22.5% of the variation in Return on assets(ROA) as the dependent variable explained by the independent variables of Rate of stock turnover (ROST), Average collection period(ACP), Current ratio (CR), Firm size (FS) and Average payment period(APP). The remaining 77.5% of variation in return on assets is explained by residual. The Adjusted  $R^2$  of 18.7% explains the variation that is being explained by an adjustment in an independent variable in the regression model.

Based on the results, firm size has statistically significant effect on return on assets as [F (4.064),  $0.000 < 0.05$ ], its positive sign indicates that an increase in firm size will increase financial performance (ROA). However, rate of stock turnover has a significant effect on return on assets.

Average collection period has statistically significant effect on return on assets as [F (-3.244),  $0.002 < 0.05$ ], this indication shows that decrease in average collection period will increase return on assets. Therefore, average collection period has a significant effect on financial performance (ROA).

Moreover, current ratio has statistically significant effect on return on asset as [F (2.985),  $0.004 < 0.05$ ], the results show that an increase in current ratio will lead to an increase in return on assets. Therefore, current ratio has a significant effect on financial performance (ROA).

#### **4.5 Summary of Research Findings**

The study was conducted on ten pharmaceutical companies in Ghana for a period of eleven years (2005-2015) however; secondary data in the form of annual financial report was obtained from the companies to analyze the data obtained through descriptive and inferential statistics. The study used Return on Equity and Return on assets as its dependent variables to measure financial performance and rate of stock turnover, average collection period, current assets, firm size and average payment period. The results show that 32.1% and 47.4% was explained by working capital management of the variations in the financial performance (return on equity and return on assets) of pharmaceutical companies in Ghana.

The results indicate a negative relationship between average collection period and return on equity as well as return on assets. The coefficient of average collection period is positive at 0.001 but statistically insignificant at 5%. Therefore, a unit increase in average collection period will

lead to an increase in return on equity. We fail to reject the null hypothesis which states average collection period has no significant effect on financial performance. This is because the data did not support the hypothesis. Based on Return on assets as a measure of financial performance, the coefficient of average collection period is negative at -0.097 which is statistically significant at 5%. When average collection period decrease by one unit return on assets will reduce. Therefore we reject the null hypothesis which states that average collection period has no significant effect on financial performance. However, this research was in line with Omega, Maniagi, Musiega and Makori (2013) Alipour (2011), Jordan, Hayajneh, Yassine (2011) and Napompech (2012).

Average payment period shows a positive relationship with return on equity and return on assets. The coefficient of average payment period is positive at 0.372 and statistically insignificant at 5%. Therefore we fail to reject the null hypothesis which states that average payment period has no significant effect on financial performance (ROE). Based on Return on assets as a measure of financial performance, the coefficient of average payment period is negative at 5.056 which is statistically insignificant at 5%. We fail to reject the null hypothesis which states that average payment period has no significant effect on financial performance (ROA). This study is in line with Alipour (2011) Mathuva (2010), Ademola (2014), Makori and Jagongo (2013) and opposes those of Sharma and Kumar, (2011), Muhammed, Sabo et.al (2015)

The study found that there was a positive relationship between rate of stock turnover and return on equity but a negative relationship between rate of stock turnover and return on assets. The coefficient of rate of stock turnover is positive at 0.010 and insignificant at 5%, we fail to reject the null hypothesis which states rate of stock turnover has no significant effect on financial performance. Based on Return on assets as a measure of financial performance, the coefficient of rate of stock turnover is negative at -0.066 which is statistically insignificant at 5%. Therefore

we reject the null hypothesis which state that rate of stock turnover has no significant effect on financial performance. The study is in line with Ademola (2014), Mathuva (2010), Deloof (2003) and Sharma and kumar (2011).

Firm size also showed a negative relationship with return on equity and a positive relationship with return on assets, was statistically significant at both side. The coefficient of firm size is negative at -1.575 and significant at 5%, we reject the null hypothesis which states firm size has no significant effect on financial performance; the data does not support the data. Based on Return on assets as a measure of financial performance, the coefficient of firm size is positive at 9.151, which is statistically significant at 5%. Therefore we reject the null hypothesis which states that firm size has no significant effect on financial performance. The data support the hypothesis; and is in line with Raheman and Nasr (2007) Muhammed, Sabo et.al. (2015)

Current ratio also showed a negative relationship with return on equity and a positive relationship with return on assets. The coefficient current ratio is negative at -0.076 and significant at 5%, we reject the null hypothesis which states that current ratio has no significant effect on financial performance and the data support the hypothesis. Based on Return on assets as a measure of financial performance, the coefficient of current ratio is positive at 0.423 which is statistically significant at 5%. Therefore we reject the null hypothesis which state that rate of stock turnover has no significant effect on financial performance, this study is in line with Haresh and Barot (2012), Akoto, Awunyo-Victor and Angmor (2013).

#### 4.6 Discussion of Research Findings

Anand (2001) asserted that an individual company's investment in working capital will be related to the type of industry it operates in and the essential working capital policy each individual company adopts. Working capital investment decision concerns how much of the firms limited resources should be invested in working capital. Companies can adopt any of these three distinct working capital policies, an aggressive policy, moderate policy and a conservative policy.

A conservative policy implies relative high investment in current assets in relation to sales. In a conservative approach stock and cash levels will generally be kept high to avoid stock out and illiquidity costs. There is also likely to be a sizeable investment in short term bank deposit and other short term liquid investment. Gitman (1997) contributed that an aggressive policy relies on minimum investment in current assets and is highly dependent on access to short term financing. He stated that with an aggressive policy, total investment in current assets will be kept to a minimum. Gitman (1997) stated that a moderate or balanced capital falls midway between the aggressive and conservative policies.

A moderate policy, the level of investment in the current assets is neither lean nor excessive. Working capital management has a positive impact on profitability and plays a vital role in creating value for shareholders.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter focuses on summary of findings, conclusions and recommendations and limitations of the study. The purpose of this study is to determine the effects of working capital management on the financial performance of listed pharmaceutical companies in Ghana. The study obtained secondary data in the form financial statements from ten pharmaceutical companies in Ghana to aid in the research.

##### 5.1.1 Research Objectives

- Analyze the effect of average collection period on the financial performance of pharmaceutical firms in Ghana.
- Examine the impact of rate of stock turnover on the financial performance of pharmaceutical firms in Ghana.
- Assess the effect of average payment period on the financial performance of the pharmaceutical firms in Ghana.
- Test the effect of current ratio on the financial performance of pharmaceutical firms in Ghana.
- Assess the effect of firm size on the financial performance of pharmaceutical firms in Ghana.

### 5.1.2 Research Hypotheses

In line with the objectives of the study, the following hypotheses have been formulated:

H<sub>01</sub>: Average collection period has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>11</sub>: Average collection period has a significant effect on the financial performance of pharmaceutical companies in Ghana

H<sub>02</sub>: Average payment period has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>12</sub>: Average payment period has a significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>03</sub>: Rate of stock turnover has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>13</sub>: Rate of stock turnover has a significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>04</sub>: Firm size has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>14</sub>: Firm size has a significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>05</sub>: Current ratio has no significant effect on the financial performance of pharmaceutical companies in Ghana.

H<sub>15</sub>: Current ratio has a significant effect on the financial performance of pharmaceutical companies in Ghana.

## 5.2 Summary of findings

The study was conducted on ten pharmaceutical companies in Ghana for a period of eleven years (2005-2015) however; secondary data in the form of annual financial report was obtained from the companies to analyze the data obtained through descriptive and inferential statistics. The study used Return on Equity and Return on assets as it dependent variables to measure financial performance and rate of stock turnover, average collection period, current assets, firm size and average payment period. The results shows that 32.1% and 47.4% was explained by working capital management of the variations in the financial performance (return on equity and return on assets) of pharmaceutical companies in Ghana.

The results indicate a negative relationship between average collection period and return on equity as well as return on assets. The coefficient of average collection period is positive at 0.001 but statistically insignificant at 5%. Therefore, a unit increase in average collection period will lead to an increase in return on equity. We fail to reject the null hypothesis which states average collection period has no significant effect on financial performance. This is because the data did not support the hypothesis. Based on Return on assets as a measure of financial performance, the coefficient of average collection period is negative at -0.097 which is statistically significant at 5%. When average collection period decrease by one unit return on assets will reduce. Therefore we reject the null hypothesis which states that average collection period has no significant effect on financial performance. However, this research was in line with Omega, Maniagi, Musiega and Makori (2013) Alipour (2011), Jordan, Hayajneh, Yassine (2011) and Napompech (2012).

Average payment period shows a positive relationship with return on equity and return on assets. The coefficient of average payment period is positive at 0.372 and statistically insignificant at 5%. Therefore we fail to reject the null hypothesis which states that average payment period has



no significant effect on financial performance (ROE). Based on Return on assets as a measure of financial performance, the coefficient of average payment period is negative at 5.056 which is statistically insignificant at 5%. We fail to reject the null hypothesis which states that average payment period has no significant effect on financial performance (ROA). This study is in line with Alipour (2011) Mathuva (2010), Ademola (2014), Makori and Jagongo (2013) and opposes those of Sharma and Kumar, (2011), Muhammed, Sabo et.al (2015)

The study found that there was a positive relationship between rate of stock turnover and return on equity but a negative relationship between rate of stock turnover and return on assets. The coefficient of rate of stock turnover is positive at 0.010 and insignificant at 5%, we fail to reject the null hypothesis which states rate of stock turnover has no significant effect on financial performance. Based on Return on assets as a measure of financial performance, the coefficient of rate of stock turnover is negative at -0.066 which is statistically insignificant at 5%. Therefore we reject the null hypothesis which state that rate of stock turnover has no significant effect on financial performance. The study is in line with Ademola (2014), Mathuva (2010), Deloof (2003) and Sharma and kumar (2011).

Firm size also showed a negative relationship with return on equity and a positive relationship with return on assets, was statistically significant at both side. The coefficient of firm size is negative at -1.575 and significant at 5%, we reject the null hypothesis which states firm size has no significant effect on financial performance; the data does not support the data. Based on Return on assets as a measure of financial performance, the coefficient of firm size is positive at 9.151, which is statistically significant at 5%. Therefore we reject the null hypothesis which states that firm size has no significant effect on financial performance. The data support the hypothesis; and is in line with Raheman and Nasr (2007) Muhammed, Sabo et.al. (2015)

Current ratio also showed a negative relationship with return on equity and a positive relationship with return on assets. The coefficient current ratio is negative at -0.076 and significant at 5%, we reject the null hypothesis which states that current ratio has no significant effect on financial performance and the data support the hypothesis. Based on Return on assets as a measure of financial performance, the coefficient of current ratio is positive at 0.423 which is statistically significant at 5%. Therefore we reject the null hypothesis which state that rate of stock turnover has no significant effect on financial performance, this study is in line with Haresh and Barot (2012), Akoto, Awunyo-Victor and Angmor (2013).

### **5.3 Conclusion**

Working capital management forms an integral part of financial management decision, these decisions involve managing of current assets and current liabilities. Managing the firm's working capital is a day to day activity which ensures that the firm has sufficient resources to continue its operations. Efficient management of working capital components will help improve the financial performance of pharmaceutical companies.

The study investigated the effects of working capital components on financial performance of pharmaceutical companies in Ghana; secondary data was used for the analysis in the form of financial statement from listed and unlisted pharmaceutical companies in Ghana. Data were analyzed by using descriptive and inferential statistics for a period of eleven years (2005-2015).

The regression results shows that 32.1% and 47.4% was explained by working capital management of the variations in the financial performance (return on equity and return on assets) of pharmaceutical companies in Ghana.

The study concludes that there was a positive relationship between rate of stock turnover and return on equity but a negative relationship between rate of stock turnover and return on assets.

The study concludes indicate a negative relationship between average collection period and return on equity as well as return on assets.

Moreover, the study concluded that current ratio also showed a negative relationship with return on equity and a positive relationship with return on assets. On the other hand, the study concluded that firm size also showed a negative relationship with return on equity and a positive relationship with return on assets, was statistically significant at both side.

Finally, the study concludes that average payment period shows a positive relationship with return on equity and return on assets.

#### **5.4 Recommendations**

Financial performance is a function of the ability of an organization to gain and manage the resources in several different ways to develop competitive advantage (Iswatia, 2007). Financial performance emphasizes on variables related directly to financial report, and is subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. The study made the following recommendation:

- i. Managers should develop good policies which can improve financial performance the companies, thereby leading to maximizing shareholders wealth.
- ii. Management of pharmaceutical companies should recruit qualified and experienced staffs to handle the accounting and finance to enable them monitor liquidity position through efficient and effective management of working capital.

- iii. Managers of pharmaceutical companies should design policies to ensure that account receivable should not be outstanding for too long.
- iv. Managers should also avoid over stocking of items which will lead to capital tied up to stock, policies should be design to ensure the right amount of stock required and to meet consumers demands.
- v. Managers should also introduce discounts to encourage prompt payment of debts outstanding and also take advantage of discounts to pay suppliers promptly to encourage good business relationship with them.

### **5.5 Limitation of the study**

The study used audited financial statement from both listed and unlisted pharmaceutical companies in Ghana. These companies used different accounting policies to prepare its annual reports therefore reliability and quality of data may not be 100%.

Time constraint was also a major factor in this research, since the time available for this research was inadequate for detailed analysis to be carried out for more variables to conclude whether the same results would have been derived.

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