

**EFFECT OF WORKING CAPITAL MANAGEMENT ON THE  
FINANCIAL PERFORMANCE OF LISTED MANUFACTURING  
FIRMS IN NIGERIA.**

**BY**

**OMONIGHO EDAFE MICHAEL  
Matric Number: 15020101014**

**BEING A PROJECT REPORT SUBMITTED TO THE  
DEPARTMENT OF ACCOUNTING AND FINANCE,  
COLLEGE OF HUMANITIES, MANAGEMENT AND SOCIAL  
SCIENCES, MOUNTAIN TOP UNIVERSITY IBAFO, OGUN STATE  
NIGERIA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE AWARD OF THE DEGREE OF BACHELOR DEGREE(B.Sc.)  
IN ACCOUNTING**

**JULY, 2019**

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**JULY, 2019**

## **DECLARATION**

I Omonigho Edafe Michael hereby declare that this project report written under the supervision of Dr. Onichabor Puis, is a product of my own research work. Information derived from various sources have been duly acknowledged in the text and a list of references provided. This research project report has not been previously presented anywhere for the award of any degree or certificate.

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**OMONIGHO, EDAFE M.**

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**Date**

## **CERTIFICATION**

This is to certify that this project titled: **EFFECT OF WORKING CAPITAL MANAGEMENT ON THE FINANCIAL PERFORMANCE OF LISTED MANUFACTURING FIRMS IN NIGERIA** was prepared and submitted by **OMONIGHO EDAFE MICHAEL**, with matriculation number 15020101014. This project report meets the requirements governing the award of Bachelor of Science (B.Sc.) Degree in Accounting, Department of Accounting and Finance of the Mountain Top University, Ogun State, Nigeria and is approved for its contribution to knowledge and literary presentation.

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**Dr. Onichabor, Pius**  
(Project Supervisor)

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**Date**

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**Dr. Akinyomi, Oladele John**  
(Head of Department)

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**Date**

## **DEDICATION**

This project is dedicated to Almighty God for his grace and mercies, to my beloved parents

Mr. Omonigho Fred and Mrs. Omonigho Gladys.

## **ACKNOWLEDGEMENTS**

Firstly, I thank Almighty God, the master of the universe and the sole source of all wisdom and knowledge, for giving me good health for the successful completion of this work. To Him, I owe a lot of gratitude. I owe a lot of gratitude to Dr. ONICHABOR PIUS my indefatigable supervisor, for his kindness, valuable guidance, constructive criticisms, comments, advice, support and encouragement despite his very tight schedule. I am most grateful to my lecturers Mr. Taleatu Akinwumi, Dr. Omokehinde Joushua, Mr. Olurin Enitan and Dr. Akinyomi, O.J (Associate professor) the Head of Accounting Department for their support and contributions towards the success of this project. I appreciate the management of Mountain Top University for providing a conducive environment for purposeful learning. I owe great gratitude to Dr. D.K Olukoya (General overseer, MFM worldwide) for his mentorship and assistance.

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## ABSTRACT

Working Capital Management has a pivotal role to play in the performance of a business enterprise or firm. In recent years working capital management has become quite a necessity to manufacturing companies especially in Nigeria because of how it caters for both profitability and liquidity of these companies, which is actually what working capital management is all about. The study adopted a descriptive study using *ex-post facto* research design. The population of the study comprises of 40 listed manufacturing companies from the consumer goods sector, industrial goods sector and agricultural sector that were quoted in the Nigeria stock Exchange as at the date of the research study. A sample size of 25 manufacturing companies from the population was selected using simple random and stratified sampling technique The Data were analyzed using descriptive and inferential statistics making use of Regression analysis to test the hypothesis. The findings revealed that Inventory Conversion Period, Debtors Collection Period and Cash Conversion Cycle has a negative significant effect on the financial performance of listed manufacturing firms in Nigeria with p-value of 0.006, 0.001 and 0.002 respectively. It was also discovered that Creditors Payment Period has a positive insignificant effect on financial performance of the listed manufacturing firms in Nigeria with p-value of 0.433. The study concluded that Working Capital Management has a significant effect on the financial performance of listed manufacturing firms and it was recommended that firms in the manufacturing sector should to give due relevance and attention to working capital management in order to improve their financial performance which is profitability and liquidity.

**Keywords:** Cash Conversion Cycle, Creditors Payment Period, Debtors Collection Period, Financial Performance, Working Capital Management, Inventory Conversion Period.

**Word Count:** 278.

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## **ABBREVIATIONS**

FPF	Financial Performance
WCM	Working Capital Management
ICP	Inventory Conversion Period
DCP	Debtors Payment Period
CPP	Creditors Collection Period
CCC	Cash Conversion Cycle
ROA	Return on Asset
ROE	Return on Equity

## **APPENDICES**

### **Appendix**

- I.** Extract from audited annual statements for selected companies.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the study**

In recent years working capital management has become quite a necessity to manufacturing companies especially in Nigeria because of how it caters for both profitability and liquidity of these companies, which is actually what working capital management is all about. Working Capital Management is the process of combining and balancing of liquidity and profitability usually from both perspective (Uremadu & Enyi, 2012). Profitability and liquidity are the core objectives of most manufacturing firms and Working Capital Management (WCM) is imperative to the achievement of these objectives. Working capital management is a very important component in maintaining liquidity, continued existence, solvency and profitability of a business entity (Mukhopadhyay, 2004). Basically, working capital management decisions has an impact on the financial performance of a business (Haleem & Aswer, 2017). A company's main objectives is to maximize profit in other to be in existence and to continue operations but this cannot be achieve without an adequate working capital management.

Working capital is the net difference between current assets and current liabilities which focuses on inventories, account receivables (debtors) and account payables (creditors) as its main assets and liabilities. Working capital (WC) can be classified into Gross Working Capital (GWC) or Net Working Capital (NWC). The Gross Working Capital (GWC) is the total current assets used to carry out the business operations. These assets are used for the production of the firm's products before they are sold to customers.

Whereas the Net Working Capital (NWC) is the difference between current assets and current liabilities. Current asset are assets that can be easily converted to cash and has a life cycle of just a year financial period such as raw materials, work-in-progress, finished goods, account receivable, prepayments, cash balance and so on. Current liabilities are amount owed to the outsiders which are due for payment within a financial year. Current liabilities includes account payables, tax for the year, accruals, bills payable, short term loans, dividend payable and so on.

The Net working Capital could be favorable or unfavorable. It is favorable that is, positive when current assets exceed current liabilities which imply that the firm can adequately settle their debt obligations. It could also be unfavorable that is, negative when current liabilities exceed current assets which connote that the firm cannot foot their debt obligations from the firms current assets.

In the past, most manufacturing businesses in Nigeria were in financial crisis due to bad working capital management and also the inability to clearly distinguish between profitability and liquidity of the manufacturing firms because actually, profitability does not connote liquidity. Profitability and liquidity are two distinctive phenomenon that has to be given due importance to. There is a distinct difference between profitability and liquidity of a company, while profitability is a long-term objective and implies that the company is profitable (that is, the ability to generate revenue in excess of the cost of generating such revenue but not necessarily cash), liquidity on the other hand is a short-term objective and implies that the company can generate sufficient cash easily to meet and sustain its day-to-day financial operations and also to cater for its debt obligations to creditors.

It has been discovered from previous research that most manufacturing firms failed from this angle, they tend to focus only on the profitability aspect of the company forgetting the liquidity aspect. Both goals run in opposite direction in the sense that an attempt by a bank to achieve higher profitability will certainly take a toll on the liquidity level and solvency position and vice versa (Olagunji, Adenanju & Olabode, 2011). Excess of Investment in working capital may result in low profitability and lower investment may result in poor liquidity. Management need to trade-off between liquidity and profitability to maximize shareholders wealth (Haleem & Aswer, 2017). A firm cannot survive without an effective liquidity management in mind. Firms with glowing long term prospects and healthy bottom lines do not remain solvent without good liquidity management (Jose, M.L., Lancaster, C., & Stevens, J.L., 1996).

A company can be profitable and yet not able to meet its day-to-day financial obligations (that is, temporarily insolvent) due to liquid cash associated with profit which are tied down with debtors and if this is not properly handled may lead to a serious financial crisis and its associated effects for the company. The crucial part in managing working capital requires maintaining its liquidity in day-to-day operation to ensure its smooth running and to meet its obligation (Eljelly, 2004). This is the reason why these days financial managers need to give paramount importance to working capital management (WCM) and mostly liquidity management aspect, because in as much as it is important for a company to be always liquid in order to meet their day-to-day operations, a company must be instinctive on the amount of cash they keep in order not to keep excessive cash (that is, idle cash).

A company must be able to balance its cash inflow with that of its cash outflow and still remain liquid, because if the outflow is greater than the inflow it may lead to the inability to cater for the

daily financial obligation of the company due to not being liquid and if the inflow is greater than the outflow it may lead to holding on to excessive cash (that is, idle cash) which will imply that potential profit being tied down to idle cash which are not utilized.

Working Capital Management also involves the management of inventories and since manufacturing companies involves the transformation of raw materials to finished products, Working Capital Management must not be taken for granted. It is the nature of manufacturing firms to buy raw materials on credit sometimes from suppliers and also to sell finished products to customers on credit and this brings about a creditors and debtors relationship with the manufacturing firm and the management of this relationship between the creditors and also the debtors with the manufacturing firms has made Working Capital Management pivotal to the sustainability of this manufacturing companies.

Management should make available inventories always to meet production run and also to meet customers' demands, but in as much as sufficient inventories are needed, management must ensure that unnecessary inventories are not kept. Production managers must therefore ensure that the appropriate amount of inventories necessary are ordered and used for the production of the finished products in order not to incur expenses of keeping unnecessary inventories. Interest is lost on the money that is tied up in inventories, storage must be paid for, and often there is spoilage and deterioration (Uremadu & Enyi, 2012).

## **1.2 Statement of the problem**

It has been proven that the reason for most companies' liquidation or folding up is as a result of liquidity problems and the inability to settle their maturing debt obligations due to poor working

capital management. This study is still on the motion that liquidity is a separate phenomenon from profitability, but most entities in Nigeria are often found merging both together which is not supposed to be. Dilemma in liquidity management is to achieve desired trade-off between liquidity and profitability (Raheman, A., & Nasr, M. 2007).

Profitability and liquidity has to be catered for separately in order to avoid any form of problems associated with the smooth running of the business enterprise. The need for efficient liquidity management in corporate businesses has always been significant for smooth running of the business, (Valrshney, 2008). Most research study view liquidity from the angle of working capital management. It is seen as the cash at hand. That is the idle cash floating within the organization.

Financial performance in this study is measured with regards to profitability in effect to the proportion of changes in working capital components. Financial managers often find it difficult to manage working capital components in such a way that it will cater for both profitability and liquidity of the manufacturing firm this may be due to the trade-off in profitability and liquidity. The profitability and liquidity trade-off is a problem encountered by virtually all manufacturing firms and must be given due relevance. The concept liquidity is a flow concept and as such refers to ability of a firm to generate adequate cash from both internal and external sources to meet its cash requirements (Egbide & Enyi, 2008). On the other hand, profitability means the strength of the firm to generate enough revenue in excess of the cost of generating such revenue.

Empirical review has supported the trade-off between the dual goals of working capital management. Eljelly (2004), examines a sample of 29 joint stock companies in Saudi Arabia and finds a strong negative relationship between liquidity and profitability. This study affirms the

need to balance liquidity and profitability because some policies that lead to the increase in profitability may tend to reduce liquidity and vice-versa. Take for example, a firm that's looking to maximize its profitability by taking advantage of the discount associated in paying trade creditors early may tend to reduce its liquidity position even before trade debts are paid by debtors.

Working capital management is quite as necessary as liquidity because a smooth and efficient working capital management ensures a healthy liquidity position and a better financial performance of the firm, and without a proper working capital management, a problem of illiquidity and financial distress may exist, that is, the inability to settle current debt obligations. The success of the firm to ensure quality financial performance and smooth running of the business enterprise depends on the effective and efficient management of working capital. But most firms have failed to realize this and have led to liquidation of most manufacturing firms.

Financial manager must ensure that the trade debtors and creditors of the firm are given due importance to ensure smooth working capital management. Also working capital management involves inventories management which is managed by the production manager of the firm. The production managers must make the right decision on the appropriate quantity of inventories to purchase and keep because excessive inventories purchased and kept might lead to wastage and could imply firm's profit tied down to inventories due to obsolesce. On the other hand, insufficient inventories purchased and kept may lead to delays in production and also stock out which could lead to loss of customers and associated profits. These problems constitute the reason for this study.

### **1.3 Objectives of the study**

The main objective to this study is to examine the effect of Working Capital Management on the financial performance of listed Industrial goods companies in Nigeria.

The specific objectives of this study include:

- I. To assess the effect of inventory conversion period (ICP) on the financial performance of listed manufacturing firms in Nigeria.
- II. To determine the effect of debtors collection period (DCP) on the financial performance of listed manufacturing firms in Nigeria.
- III. To ascertain the effect of creditors payment period (CPP) financial performance of listed manufacturing firms in Nigeria.
- IV. To evaluate the effect of cash collection cycle (CCC) on the financial performance of listed manufacturing firms in Nigeria.

### **1.4 Research questions**

From the above specific objectives to this study, the following research questions have been deduced:

- I. What is the effect of inventory conversion period (ICP) on the financial performance of listed manufacturing firms in Nigeria?
- II. What is the effect of debtor's collection period (DCP) on the financial performance of listed manufacturing firms in Nigeria?

- III. What is the effect of creditor's payment period (CPP) on the financial performance of listed manufacturing firms in Nigeria?
- IV. What is the effect of cash collection cycle (CCC) on the financial performance of listed manufacturing firms in Nigeria?

### **1.5 Research hypotheses**

From the above research question, the following research hypotheses have been postulated:

**H<sub>01</sub>:** There exist no significant relationship between inventory conversion period (ICP) and the financial performance of listed manufacturing firms in Nigeria.

**H<sub>1</sub>:** There exist a significant relationship between inventory conversion period (ICP) and the financial performance of listed manufacturing firms in Nigeria.

**H<sub>02</sub>:** There is no significant difference between debtor's collection period (DCP) and the financial performance of listed manufacturing firms in Nigeria.

**H<sub>1</sub>:** There is a significant difference between debtor's collection period (DCP) and the financial performance of listed manufacturing firms in Nigeria.

**H<sub>03</sub>:** No significant relationship exists between creditor's payment period (CPP) and the financial performance of listed manufacturing firms in Nigeria.

**H1:** Significant relationship exists between creditor's payment period (CPP) and the financial performance of listed manufacturing firms in Nigeria.

**Ho4:** There is no significant difference between cash conversion cycle (CCC) and the financial performance of listed manufacturing firms in Nigeria.

**H1:** There is a significant difference between cash conversion cycle (CCC) and the financial performance of listed manufacturing firms in Nigeria.

## **1.6 Significance of the study**

The impact of working capital management components on the financial performance of firms in Nigeria must be given due consideration as many manufacturing firms cannot succeed without an effective working capital management in place, take for instance what will be the effect on the financial performance of firms, if Debtors' Collection Period (DCP) is reduced or what will be the effect of financial performance, if Cash Conversion Period (CCP) is increased?, what will be the proportion of the increase or decrease in the financial performance as an effect to the changes in these working capital management components or will it remain unchanged?.

The liquidity of firms is of no doubt very crucial to firms as it helps prevent against insolvency which may lead to not being able to cater for short-term liabilities which may lead to greater problem of liquidation of such a company. Firms with less current assets will having problem in continuing operations while if the currents assets is too much, it shows the return on investment for the company is not in perfect condition (Horne & Wachowicz, 2000). Liquidity is also

important because it serves as bases for firms to reinvest in short-term assets thereby maximizing their profitability positions.

The study test the relationship between Working Capital Management (WCM) and its effect on the financial performance of listed manufacturing companies in Nigeria and how these companies can achieve their short-term objective of optimizing their liquidity position and also their long-term objective of maximizing their profitability. The study is also relevant to financial managers of manufacturing firms in Nigeria on how they can balance the liquidity of manufacturing companies without disrupting or reducing the company's profitability potentials because most financial managers of manufacturing companies in Nigeria finds it difficult to balance liquidity and profitability.

It is also useful to the production managers of manufacturing firms on how to manage the inventories of the firm, that is, the appropriate and sufficient amount of inventories that should be purchased and kept to ensure smooth running of the firm. Inventories management is pivotal to successful working capital management because it ensures that the right amount of inventories are purchased and kept that will ensure sufficient production without delays and also will ensure that idle cash are not tied down to stock that are not purchased by customers as a result of excess supply over demand of the goods produced by the firm.

It also helps the financial managers ascertain how to cater for working capital components in such a way that it won't endanger profitability and most importantly the liquidity of the business

enterprise. For instance, how much time interval will be given to trade debtors to settle their debt obligations compare to the amount of time available for settling creditors of the firm. This is very pivotal to the profitability and survival of the business enterprise. The profitability liquidity tradeoff is significant because if working capital management is neglected, it could lead to the firm's failure and might lead to them facing bankruptcy (Kargar & Bluementhal, 1994).

This study helps to bridge the gap in literature by studying the impact of working capital management on the financial performance of most manufacturing companies in Nigeria.

### **1.7 Scope of the study**

This study test working capital management components on the financial performance of listed manufacturing companies in Nigeria from the period of 2012-2018 using a sample of 25 manufacturing companies that are listed in the Nigeria Stock Exchange.

### **1.8 Limitation of the study**

This research study is limited to the period of 2012-2018 as well as a sample of 25 companies as result of unavailability of financial data of some companies. The study was carried out using a sample of 25 manufacturing companies from only consumer goods sector, industrial goods sector and agricultural goods sector that were listed on the Nigeria Stock Exchange because these companies' financial data were easily accessed on the Nigeria Stock Exchange fact book.

### **1.9 Operational definition of terms**

**Working Capital Management (WCM)** is the management of the current assets and current liabilities of a firm in order to ensure that the firm has sufficient liquid assets to meet their current maturing obligations or liabilities.

**Working Capital (WC)** is the net difference between current assets and current liabilities of a business enterprise.

**Debtors/ account receivables** are amount to be received by the firm for goods sold to customers on a credit basis.

**Debtors collection period (DCP)** is the time interval it takes customers to whom goods and service have been sold to on a credit terms to settle their debt obligations to the firm.

**Creditors/ account payables** are amount due to be paid by the firm for purchases made by them to the suppliers.

**Creditors Payment Period (CPP)** is the time interval between when credit purchases are made and the time payment is actually made by the firm to the suppliers.

**Inventories** are stock of goods such as raw material, work-in-progress, and finished goods which are waiting for sale.

**Inventory Conversion Period (ICP)** is the length of time it takes to transform inventories into debtors or cash.

**Cash Conversion Cycle (CCC)** is the amount of days between when a firm collects proceeds from sales to debtors and when they actually settle their debt obligations to their creditors.

**Liquidity** is ability of a firm to adequately and continuously settle debt obligations as at when they fall due with the available cash.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

In this chapter of this study we shall be considering the conceptual framework, theoretical framework and finally the empirical framework of this study in order to examine the concepts, theories and empirical work done in which this study has its bed rock.

#### **2.1 Conceptual Framework**

We are to consider the concept behind the independent variable which is Working Capital Management (WCM) and also the dependent variable which is financial performance in this review.

##### **2.1.1 Working Capital Management (WCM)**

Working capital is the additional amount of current assets over the amount of current liabilities (Nurein, 2014). However most scholars define working capital has the amount of money available to finance the organization's short-term debt obligation. Working capital is not a permanent investment but as the name implies it is the capital or items required in the day-to-day management of a business. Working Capital Management is therefore the management of these capital or items required in the day-to-day running of the business.

According to Arnold (2008) and Gitman (2009), working capital is divided into three components which are: inventory management which comprises of raw materials purchased, work in progress and stock of finished goods; Account receivable and payable management which account for amount receivable and owed to other firms and individuals in ordinary course of business of the firm (Feletilika, 2011). Cash management requires the formulation of

strategies to facilitate early collection of debt owed to the firm and delaying payment for credit by the firm (Block & Hirt, 1992 and Iarntz, 2008).

Based on the component of working capital studied by Arnold (2008) and Gitman (2009), these components of working capital can be measured by inventory conversion period (ICP), debtor's collection period (DCP), creditor's payment period (CPP) and cash conversion cycle (CCC).

### **2.1.1.1 Net working capital**

Net working capital is the net difference between total current assets and total current liabilities of a firm. Net working capital may be positive indicating that total current assets exceed total current liabilities and that the company can settle its current liabilities using its current assets or it could be negative indicating that the total current assets are less than the total current liabilities which means that the company cannot settle their debt obligations using current assets. A positive net working capital is of due importance for any company that want to maintain its financial liquidity (Kosmala, Dos, Blach & Gorczynska, 2016). Net working capital may comprise of Inventory purchased by cash, account receivables (current assets), account payables (current liabilities). The Inventory Conversion Period (ICP) plus account receivables period also known as Debtors' Collection Period (DCP) minus account payables period also known as Creditors' Payment Period (CPP) will be equal to the Cash Conversion Cycle (CCC)

#### **2.1.1.1.1 Current Assets**

Current assets are short-term assets of an entity that are either cash or assets that can easily be convertible to cash within a short time period. Current assets comprises of cash, account receivables, inventories and market securities. Accounts receivable arise due to the fact that

companies often sell their product to customers on credit terms in order to receive cash on a later or future time. It is made up of trade credit sales to companies and consumer credit sales to end product consumers. Cash consist of bank deposits either as demand deposits or time deposits. Demand deposits is the cash in company's current accounts that it can withdraw without notice to settle its immediate financial obligations. However, time deposits are the funds in a company's savings accounts that can only be withdrawn after a notice has been served.

Marketable securities such as treasury bills and commercial paper. Commercial papers are current unsecured debt instruments companies which while treasury bills are current debt instruments which the government sell. (Brealey, Myers, & Marcus 2001).

Holding large proportion of cash eliminate the risk of cash shortages, whilst increasing the cost of holding money and the other benefits that could have been earned if the cash was invested in interest earning assets. However, holding less cash implies that the company has to incur cost of liquidating some assets into cash. The process of liquidating these assets can however be very long as it involves the process of finding a willing buyer, negotiating the price, agreeing to terms of the transaction, payment process by the customer, banks process payment up the point the money is available for use to the company. Therefore, Financial Manager must then determine the amount of cash expenses and revenues and appropriate cash balances in their hands. (Brealey, Myers, & Marcus 2001).

Brealey, Myers, & Marcus (2001) were still on the motion that, the management of current assets involves trade-off between current assets costs and benefits by searching for the optimal level of

currents that minimizes the total costs (carrying and shortage costs) and that maximizes the benefits associated carrying current assets.

#### **2.1.1.1.2 Current Liabilities**

Current liabilities are the current obligations of the entity or company that as a life span of one financial year. Almost all non-financial or manufacturing firms has some amount of current liabilities in its business operation. This is because most manufacturing firms carry out substantial part of their business operations on a credit basis.

Current liabilities comprises of account payable, accruals, short-term loan and so on. Account payable exist as a result of firms' habit of buying its inventories from suppliers on credit basis. That is, buying of inventories from suppliers and settling their payments on a later date. This is debt which usually constitutes 40% of current liabilities of non-financial company and the percentage varies with the size of the company (Brigham & Daves 2007). Account payables settlements also allow for some benefits based on the credit terms such as trade discount and credit period.

Accruals are expenses due for payment but not yet paid. Accruals are usually created when an expenses that is to be paid on a financial year is carried forward to the next financial year. Some examples of accrual can be accrued salaries and wages of employees, accrued rent payment, accrued tax expense and so on.

Short-term loans are loans borrowed to finance the activities of the business for a short period of time usually one accounting year. Short-term loan could be one year maturing loan from friends and family, companies or the financial institutions. Short-term could also include short-term lease agreements, bank overdraft and so on.

### **2.1.1.2 Inventory Conversion Period (ICP)**

Inventory conversion period (ICP) is the length of time it takes for inventory to be transformed into cash or debt. According to (Uremadu & Enyi, 2012). It represents the period it takes to convert inventories into debtors or cash sales. Inventory management plays a crucial role in working capital management as it helps to ensure smooth production run and also help prevent against stock-out situation. Inventory management is a component of investment decisions and behaves like any other investment in inventories and is expected to generate a higher return than the initial cost of investment, that is, it expected to have a significant positive impact on profitability (Egbide & Enyi, 2008).

From the reports Byrnes (2003), inventory management of Dell Corporation focused on lowering inventory by 50 percent, improving lead time by 50 percent, reducing assembly costs by 30 percent, and reducing obsolete with its reducing variance between supply and demands, launched the company to higher levels of liquidity and profitability. It therefore suffices to say that Inventory management has a crucial impact on the liquidity of manufacturing firms. Inventory conversion period can be mathematically described as:

$$\text{ICP} = \frac{\text{Average inventories} \times 365 \text{days}}{\text{Cost of sales per annum.}}$$

#### **2.1.1.4.1 Inventory Management**

Inventory management involves a high cost and it ties up capital. Management of inventory involves keeping the appropriate stock or quantity of inventories. The appropriate stock or quantity of inventories to be kept varies among different managers of a firm.

For instance the finance manager would like to maintain a low level of inventories to avoid any form of unwise and unnecessary spending, whereas the marketing manager would prefer to keep enough inventories of finished goods in order to give a quick response to orders from customers. Production managers usually prefer a high level of inventories to avoid production delays and ensure that the appropriate goods are produced at the right quality and at the appropriate time. The Purchasing Manager is interested in purchasing the appropriate amount of inventory for the right purpose (Gitman & Zutter, 2012).

Inventory therefore involves a trade-off between the benefits and cost of keeping small or large proportion of inventories. In most firms the appropriate personnel to make correct decision on the amount of inventory to keep is usually the production manager. Inventory management involve various systems of managing inventories such as the ABC system, the EOQ model, JIT system and so on.

#### **2.1.1.2.1 ABC System**

The ABC system categorized inventories into three which are category A, B, and C. Category A contain inventories of raw materials and finished goods that involves the largest amount of

investment, the category B contains the inventory that contain the next largest investment after category A, and category C contains the inventories with the minimum level of investment.

However the category of the inventories of each raw material or finished goods determines the level of monitoring. Category A will receive the closest monitoring due to its high amount of investments. Category A will be monitored using a continuous process of inventory that involves the verification of each inventories on a daily basis. Category B of inventory is monitored using periodical checking on a weekly basis for example. Category C components of inventories are monitored using the two bins method.

The two bin method involves a situation whereby inventory components are kept in two bins and stocks are taken from the first bin whenever inventory components are required until the first bin is exhausted. An order is placed in order to replenish the first bin while inventory component are then taken from the second bin. Then the inventory components are drawn from the previous bin until it is finished and exhausted, and so on (Gitman & Zutter, 2012).

#### **2.1.1.2.2 Economic Ordering Quantity (EOQ) Model**

The EOQ model determines the optimal ordering quantity of inventory to be order at each ordering point. The model considers the associated inventory cost and it also determines the inventory order size that minimizes the total inventory costs. These associated inventory costs are categorized into inventory ordering cost and inventory holding costs.

The inventory costs include fixed costs of placing and receiving an order. It includes the cost of writing a purchase order, processing the order paperwork, receiving the order and checking the order received against the invoice per order. Whereas the holding cost are cost of keeping inventory components within a specific period of time. This cost includes inventory storage, insurance, deterioration and obsolescence, and the opportunity cost of having cash tied down to inventory.

Ordering cost decreases as inventory order size increases due to discount being given as a result of ordering large quantity, while inventory holding cost increases as inventory order size increases. Holding cost are costs variable per unit of keeping an inventory component for a specific period of time.

Optimal order size is achieved where inventory ordering cost equals inventory holding cost. The larger the order size, the larger the inventory quantity held in the inventory which leads to a rise in the carrying cost of the inventory (Brealey, Myers, & Allen, 2011). Therefore this need for inventory ordering and holding costs trade-off is expedient because an optimal order size reduces the total inventory cost. EOQ is measured as thus;

$$EOQ = \sqrt{\frac{2 * \textit{quantity demanded} * \textit{cost per order}}{\textit{Holding cost}}}$$

#### **2.1.1.2.3 Just-In-Time (JIT)**

The Just-In-Time management system is one that keeps a low level of inventory by ordering supplies of inventories only when they are needed for production. This system was created and

brought to perfection by some companies in Japan and now it is used today by different companies throughout the world (Brealey, Myers, & Allen, 2011).

This inventory management system allows for delivery of inventories to be made to the production point at short intervals throughout the day. Therefore there is a need to ensure smooth and quick delivery of inventories as and when needed to avoid production delay or standstill and because of this customers who use this type of inventory system must be in constant touch with their suppliers at all times.

### **2.1.1.3 Debtors Collection Period (DCP)**

Debtors collection period (DCP) is the time interval it takes customers to whom goods and services have been sold to on a credit terms to settle their debt obligation. It represents the average number of days that it takes a company to receive payments from its customers (Lantz, 2008). However it has been discovered among scholars that shortening of the debtor's collection period will lead to a greater liquidity and financial performance of firms. This has made many companies to formulate strategies for reducing the debtors' collection periods for the purpose of improving liquidity and profitability of the companies (Boisjoly, 2009). The shorter the period for debt collection from debtors, the higher the firm's liquidity position improves but the longer or lengthier the period for debt collection, the greater firm's cash inflow and profit is tied down with debtors which lead to a reduction in the firm's liquidity position. Debtor's collection period (DCP) is mathematically presented as:

$$\text{DCP} = \frac{\text{Trade Debtors}}{\text{Sales per annum}} \times 365 \text{ days}$$

#### **2.1.1.3.1 Management of debtors/Account receivables**

The management of debtors/Account receivables is of due importance to the effective management of working capital and it is the responsibility of the company's management to set the terms of payment and make the decision of which customer qualifies for trade credit. The management of Account receivables involves the management of trade credit, payment terms, credit decision and collection policies.

The management of Account receivables can be adequately regulated by effective budgeting which sets out how credit sales would be collected at a particular period of time. The objective is to collect cash from credit sales as immediately as possible without losing customers to high pressure of debt collection. The achievement of this objective can be fulfilled by a careful determination of credit policy, credit terms, and credit monitoring.

#### **2.1.1.3.2 Credit policy**

Credit policy involves the assessing the credit worthiness of a customer and comparing it to the company's minimum requirements and standard of granting credits and for extending credit to customers. Credit policy can be seen as a written guideline that provides the terms and condition for granting credit sales to customers, customers' qualification criteria, procedure for collecting cash for the credit sales, and step to be taken in case of customers' delinquency.

The firm's optimal credit policy is the trade-off between the opportunity costs of lost sales (due to not granting credit to customers) and costs associated with funding the accounts receivables

(granting credit to customers) plus the expected costs of default on accounts receivables (bad debt). It contains the slightest period of credit, cash discounts and a depiction of the type of credit instrument (Gitman & Zutter, 2012).

### **2.1.1.3.3 Credit period**

A credit period is the time frame between when a customer purchases a product and when the customer's payment is due. In other words, this is the amount of time a customer has to pay for the product. Most firms have established policies with customers so that purchases can be made on account. These credit sales helps increase the amount of sales by the companies, thereby allowing customers to purchase items before they actually have the cash or funds to pay for the items purchased.

Credit period is the date of maturity of credit that a company is willing to extend, depending on the goods being sold and the customers purchasing the goods. For instance, imperishable or long lasting goods will have a high credit period. Also a creditworthy established customer will get a better credit terms than an unknown customer whose creditworthiness cannot be ascertained.

Before a credit sale can be made, credit terms must be established. For instance a 2/10 N/60 credit policy, this means that if the customer pays for the product within 10 days he gets a 2 percent cash discount. If the discount isn't taken, the customer must pay the full invoice price within 60 days from the purchase. This 60-day time frame is considered the credit period. It's the amount of time the seller is giving the buyer credit for the transaction.

#### **2.1.1.3.4 Credit terms**

These are the terms of sales offered by the seller to credit customers. The credit terms granted to customers depends extensively on the value, norms and practices of the industry which the firm belongs to. However the firm tries it possible best to shape its credit policy within such limiting factors.

Discounts encourage a quick and faster repayment of debts by debtors. For instance, the example given above where a 2/10 N/60 credit policy, this means that if the customer pays for the product within 10 days he gets a 2 percent cash discount. If the discount isn't taken, the customer must pay the full invoice price within 60 days from the purchase. The credit terms can be cash on delivery (COD), cash before delivery (CBD) or progressive payments for customized products.

Conditional credit terms can also be used for customers who usually or may struggle to pay their debts such as hire purchase agreement. This is a situation where the seller assume the ownership of the goods until the final payment has been made (Brealey, Myers, & Allen, 2011; Gitman & Zutter, 2012).

#### **2.1.1.3.5 Credit analysis**

This represents systematic evaluation of the customer's willingness and ability to pay for the good sold to him on credit. The systematic evaluation done by looking at the past and present records and also the forecasted financial conditions of the customer in order to determine the credit worthiness and the ability of the customer to pay up their debt in the future.

The 5Cs of credit are used to determining which customers should receive credit (Brealey, Myers, & Allen, 2007). These are shown in the table below:

**Table 2.1 The 5Cs of Credit**

<b>5Cs of credit</b>	<b>Explanation</b>
Capacity	Legal and economic ability of customers to borrow and incur debt.
Character	Customer's reputation and hence desire to settle debt.
Capital	If the customer has some capital at risk it makes it likely that the customer will repay their debt.
Collateral	This represents the asset that can be seized and sold in order to settle debt by the customer.
Condition	These are economic event and situations prevailing which affects the customer's ability to pay back the credit given to him by the sales of goods to him.

(Source: Researcher's Field Survey, 2019)

However, the firm may carryout credit analysis for only new customers as previous or existing customers records are obvious indicators of their behavior to credit terms of sales. Financial institutions like banks can also help carry out credit analysis on behalf of a seller. The firm selling to the customer contact the potential customer's bank requesting for information regarding the customer's average bank balance, access to bank credit, and general reputation. The larger the doubtful orders the more it must be subjected to vigorous credit analysis.

#### **2.1.1.3.6 Credit monitoring**

This is a review of a firm account receivable with the aim of accessing discrepancy in the company's account receivables payments. Credit monitoring is important because slow debtors collection period are costly as they increase debtors collection period thereby leading to an increase in company's investment tied down with debtors.

Most firms use the schedule of age to monitor and control credit giving terms, which indicates a company's account receivables by how long each account is with the firm as a customer, specifying age bracket and percentage of account receivables in bracket. It enables the firm to see the percentage of its customers, who are still more eligible to take discounts (young age group), how many are less eligible, no-longer eligible and who should be sent a delinquency etc. It helps to link collection policy with aging schedules.

#### **2.1.1.3.7 Collection policy**

This is a policy aimed at ascertaining how past debts are to be collected from trade debtors of the company. Usually the collection procedure starts by sending the trade debtors delinquency letters informing them of past overdue status of the account, asking them to contact the firm to discuss alternative means of repayment and pointing out what legal recourse the firm has to offer. This is followed by initiating telephone call passing the same message, employing a collection agent. But however, if all the listed procedures fails, legal actions will be brought against the erring trade debtors.

#### **2.1.1.4 Creditors Payment Period (CPP)**

Creditor's payment period (CPP) is the time interval between credit purchases and the time when payments are made to creditors by the firm. Creditors' payment period has also been defined by various scholars.

Uremadu & Enyi, (2012) defines creditors' payment period as the time period between when the credit purchases are executed and when payment are made for the purchases by the creditors. Creditors' Payment Period (CPP) represents the average number of days companies takes to settle their debt obligations to its creditors/suppliers (Erik, 2012). Most scholars are of the idea for companies reducing their creditors payment period in order to maintain high liquidity position but however most suppliers have made it difficult for most companies to stick to these advice from scholars as they have device a means to lure these companies into paying for their debt obligation quickly by offering them discount for settling their debts on time. Creditor's payment period is mathematically presented as thus:

$$\text{CPP} = \frac{\text{Creditors} \times 365\text{days}}{\text{Cost of Sales}}$$

#### **2.1.1.5 Cash Conversion Cycle (CCC)**

The CCC is used as a comprehensive measure of working capital as it shows the time lapse between the expenditure for the acquisition of raw materials and the collection of sales of finished goods (Padachi, 2006). Cash conversion cycle (CCC) is the length of days between when the firm collects proceeds of sales from debtors and the time they actually settle their debt obligation for supplies purchased by them from creditors. It can be expatiated as thus: the length of when accounts are received from debtors and the time of payment to creditors. However when

the company grants a customer a time extension for settle their debt, it may lead to an impairment in the firm's liquidity position.

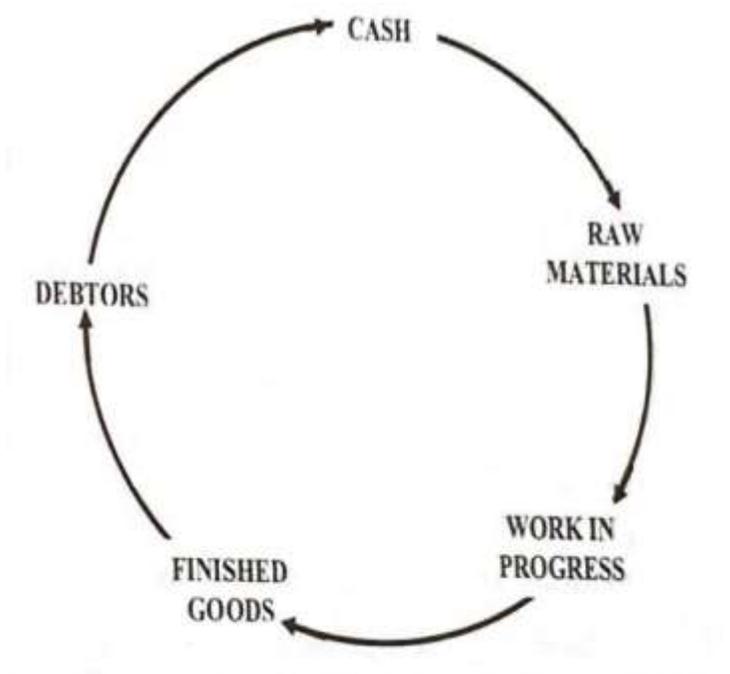
Where policies has been put in place to grant customers a more liberal time frame, profitability may increase but as a substitute of liquidity (Erik, 2012). It has be discovered from previous studies by scholars that shorter cash conversion period in days will lead to greater liquidity and profitability of firms. Cash conversion cycle (CCC) is mathematically expressed as thus:

$$\text{CCC} = \text{Average account receivable} + \text{Average inventory} - \text{Average account payable.}$$

#### **2.1.1.5.1 The Operating Cycle**

The operating cycle theory remains one of the relevant theories in working capital management. The operating cycle posit that the operation of a firm start from the purchasing of raw materials from suppliers, then these raw materials are then transformed to finished products within a stipulated period of time, which are then converted to receivables by selling them to customers, and then finally converted to cash when proceeds are received from the customers. One major and significant aspect to note is that changes in credit and collection policy have a significant effect on the accounts receivable balance outstanding (Richard & Laughlin, 1980).

According to operating cycle theory when companies grants more an extension in credit terms to its customers there is a higher propensity of having a bigger, but significantly lower liquid investment in cycle (that is, the inventory turnover) which shows the number of times with which business firms converts the totality of their raw materials stock, their work-in-progress and ultimately the finished goods into product sales (Yusuf & Nasruddin, 2015). The operating cycle can be depicted using the diagram below:

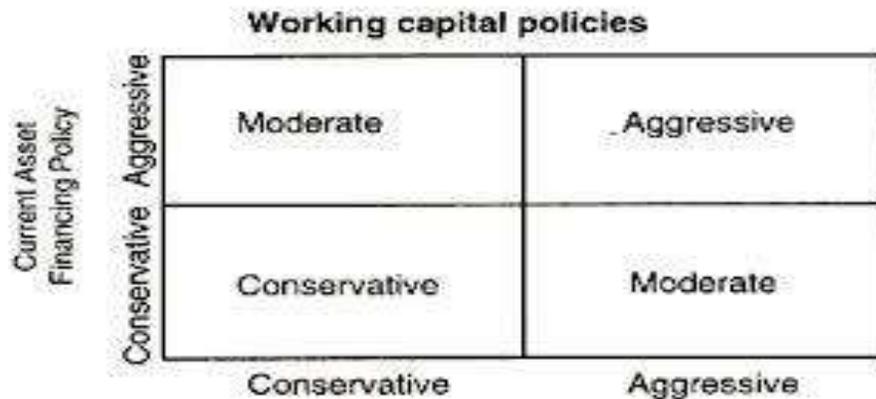


**Figure 2.1 The Operating Cycle**

### **2.1.1.6 Working capital policies**

Working capital need to be managed effectively as it helps cater for the firm's financial operating obligations and also its liquidity positions. As a business grows, the firm has to monitor its working capital effectively and this includes adopting a working capital policy that will enable the business run effectively and efficiently.

The working capital policies might be aggressive, moderate or conservative as the situation may require. However, the working capital policies may be elucidated with the diagram below:



**Figure 2.2**

(Source: Shivakumar & Thimmaiah, 2016)

From the above diagram, the working capital policies which are sometimes refer to as strategies are elucidated subsequently.

**2.1.1.6.1 Aggressive strategy/policy**

The aggressive policy of working capital focuses on maximizing profit thereby taking high risks. This is the most aggressive of all the working capital strategies. In this strategy, the long-term funds are invested in the fixed assets of the company. The aggressive strategy is also called the high risk strategy or profit strategy.

**2.1.1.6.2 Moderate strategy**

The moderate strategy is a balanced strategy as the name implies. In this policy part of the long-term funds are invested in fixed assets while the remaining part are invested on current assets. It is an equal approach in sharing or distributing the long-term funds moderately. It is a balanced strategy between the aggressive strategy and the conservative strategy.

### **2.1.1.6.3 Conservative strategy**

This is the direct opposite of the aggressive strategy. The conservative strategy focuses on minimizing risks thereby taking low risky decisions in order to avoid losses. In this policy part of the firm's permanent working capital are funded by long-term sources. The objective of the conservative strategy is to play safe and avoid losses.

### **2.1.2 Financial Performance**

Financial performance is the means of ascertaining the outcomes of a firm financially and how they have performed in monetary terms. (Kiptoo, Kariuki & Maina, 2017). Financial performance investigates how a company is striving in relation to how they cater for their financial operations. According to Bhunia, Mukhuti, and Roy (2011), financial performance entails a firm's total financial health over a particular period of time. Financial performance refers to a measure of the outcomes of policies and operations of firms in monetary and financial terms. Financial performance is sub-divided into profitability and liquidity.

#### **2.1.2.1 Profitability**

Profitability refers to the firm's ability to generate income in excess of the expenses of generating the revenue used to gain the income. (Uremadu, Egbide, & Enyi, 2012). Profitability is key for every firms, this is because it determines the sustainability of the business. Every companies is envisaged to make profit to expand their operational business activities. It measures management efficiency in the use of organizational resources in adding value to the business. (Owolabi & Obida, 2012). Profitability is a type of measure that test performance of a firm

financially and how a company can utilize its resources to maximize the value of the firm. Return on Asset, Return on Equity, gross profit margin, net profit margin, Return on Capital Employed (ROCE) are all yardstick for measuring profitability.

#### **2.1.2.2 Return on Asset (ROA)**

Return on asset indicates management ability of the firm to earn an efficient return on the company's assets. ROA Connote that a firm it a larger number or amount of assets should be able to earn higher returns on them. Return on Assets is the total income available to a company as a percentage of the total assets available for utilization by that company. (Owolabi&Obida, 2012). ROA uses the Net profit before the deduction of interest expenses because interest is the return to the creditors for the stake they have in the firms. Return on Assets can be measured mathematically as thus:

$$\text{ROA} = \frac{\text{Net profit before interest and tax}}{\text{Total Assets}} \times 100\%$$

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

Return on Equity (ROE) measures the total returns available to the owners of the business after the payment of tax. Shareholders are entitled to residual profits in form of dividend as a reward for their investment in the company. The ROE shows if a firm is making enough profits to reward its equity owners (shareholders) for the investment in the firm. ROE is mathematically measured as:

$$\text{ROE} = \frac{\text{Net profit after tax}}{\text{Total Equity}} \times 100\%$$

### **2.1.2.5 Liquidity**

Liquidity is simply means being solvent which implies that the firm can adequately and continuously meet its maturing and operational obligations. The term liquidity in this study is viewed from the perspective of cash at hand. Liquidity is a flow concept that explains the ability of firms to generate revenue in cash internally and externally to meet its day-to-day cash requirements (Egbide&Enyi, 2008).

The crucial part in managing working capital is essential in balancing its liquidity in day-to-day business operations and to meets its daily obligation (Eljelly, 2004). In order to ensure healthy liquidity position, working capital management is a necessity for any firm that wishes to be profitable in the long run. Dilemma in liquidity management is to maintain a proper balance between liquidity and profitability (Raheman et al, 2007).

Liquidity management in today's business operation cannot be over emphasized as it help cater for numerous and diverse situation ranging from payment of debt obligation to taking advantage of transactional investment opportunities. Liquidity can be measured using liquidity ratios such as current ratio, quick or acid test ratio and operating cash flow ratio. These ratios are subsequently discussed below:

### **2.1.2.6 Current Ratio**

The current ratio emphasizes the firm's ability to off-set its current liabilities against its current assets. This ratio tests the ability of the firm to settle its current debt obligation from its current assets. A current ratio of 2:1 is considered optimum because it shows that the current assets of

the firm can adequately off-set its current liabilities without any cause for alarm. Current ratio is measured as:

$$\text{CURRENT RATIO} = \frac{\text{Current assets}}{\text{Current liabilities.}}$$

#### **2.1.2.7 Quick or Acid Test Ratio**

The quick ratio which is sometimes refers to as acid test ratio measures the firm's ability to settle immediate debt obligations from cash and cash equivalent. This ratio off-sets its current liabilities using its most liquid assets. A quick ratio of 1:1 serves as a buffer and its indicative that the firm is well protected against any danger of insolvency as a result of inadequate liquidity position. Quick ratio is mathematically presented as:

$$\text{QUICK OR ACID TEST RATIO} = \frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$$

#### **2.1.2.8 Operating Cash Flow Ratio**

Operating cash flow ratio determines the firm's ability to cater for its current debt obligations from its operating cash flow. The operating cash flow ratio however measures how the company off-set its current liabilities using just its cash flow from operations. As the company operates cash are input into the company as cash inflow and output as cash outflow. This method of liquidity measurement indicates that the firm is highly liquid. Operating cash flow ratio is measured as thus:

$$\text{OPERATING CASH FLOW RATIO} = \frac{\text{Cash flow from operations}}{\text{Current liabilities}}$$

## **2.2 Theoretical Review**

We shall be looking at the theoretical background behind working capital management and liquidity.

### **2.2.1 Theories of Working Capital Management and Financial Performance**

(Yusuf and Nasruddin, 2015) postulated the theories of working capital management to include: the agency/stakeholder theory, risk and return theory, the operation and cash conversion theory, the operating cycle theory and the resource-based theory. These theories are discussed here below.

#### **2.2.1.1 Agency theory, (Stephen Ross 1970) and Stakeholder Theory, (Freeman 1984)**

The agency theory was propounded by Stephen Ross and theory emerged as a result of the separation of management from ownership. The need came due to stringent competition and complexity in management techniques which requires only qualified professional managers to optimally maximize the shareholders wealth. However, in today blue chip companies, there are diverse stakeholders with diverse opinion. It there becomes difficult for owners to manage their investment hence the need to engage professional managers is imperative. An agency relationship could be defined as one, where one or more persons being referred to as the principal interact with another the agent to carry out some tasks or service on their behalf which has to do with delegating some authority in terms of making decisions (Jensen & Mecking, 1976). While the term stakeholders refers to groups of various individuals coming together to achieve various types of objectives in order to maximize their return from their stake (Freeman, 1984).

However, the agency theory in accordance with working capital management is viewed from the angle of the financial managers who act as an agent to the owners (that is, the principal) of the firm. The financial manager of a firm takes major decisions concerning the inventories to be purchased, when creditors will be paid their stake and also when the debt from debtors will be collected.

The agency/stakeholder theory can also be viewed from the perspective of the stakeholders which includes the shareholders, suppliers, customers, creditors, debtors, employees and so on. The stakeholders for instance the suppliers sell to the firm the raw materials for production and in return expect payments for the supplies made. But if these supplies are made on credit, the supplier becomes a creditor to the firm and thus expects their debt to be paid on time. In some cases customers also buy the finished product of the firm and expect to have a satisfactory value for their money. But if these goods are sold to them on credit, the customer becomes a debtor to the firm.

#### **2.2.1.2 Risk and Return Theory, (Harry Markowitz, 1959)**

The risk and return theory was developed by Harry Markowitz in the year 1959. The risk and return theory is one of the relevant theories in portfolio management. The management of portfolio involves making investment decisions that has to do with risk. Making these investment decisions that has to do with risk involves two categories of individuals (the risk-seekers and the risk-averse). The main focus of risk-seekers is to maximize their profitability (Tiegen&Brun,

1997). Whereas risk-aversers are the opposite of the risk seekers as they overestimate losses and underestimate profit.

Since a company cannot own everything, relevant decisions concerning the appropriate amount of inventories, receivables, and payables needs to be determined by the firm. The risk and return theory can be applied to working capital management as it determines the ability of financial managers in the collection of receivables and determining the appropriate amount of inventories to be acquired and kept.

The risk and return theory can also be integrated on working capital management in the aspect of liquidity and profitability trade-off. If a firm chooses to be liquid it should be at the expense of the profit and vice-versa. A firm must therefore endeavor to balance its liquidity with that of its profitability. Inadequate trade-off between liquidity and profitability may result to either excess or shortage of working capital management components. The table below buttresses this point.

**Theoretical relationship between working capital management components and financial liquidity**

**Table 2.2**

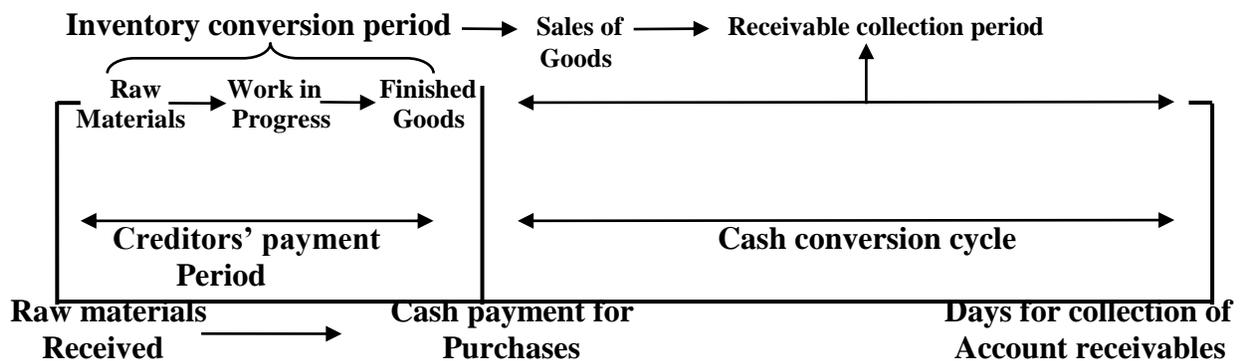
WCM COMPONENTS	EXCESS	SHORTAGE
1. CASH	Excess of cash means idle cash being tied down which could be reinvested to gain higher returns to boost profitability.	Shortage of cash indicates to insolvency and the inability to settle debt obligation as at when necessary and this may lead to liquidation.
2. INVENTORIES	Excess of inventories is associated with unnecessary payment of storage cost and may also lead to loss of stock and its associated profit due to obsolescence.	Shortage may lead to stock-out and its associated costs. This could lead to emergency purchase and higher cost of replenishment
3. RECEIVABLES	Excess may lead to liquid profit being tied down with debtors and may also institute a high risk of losing profit to bad debts.	Shortage may lead to low turnover and low profitability.
4. PAYABLES	Excess payable portrays high debt obligations to the firm in respect to interest payments and loss of reputation.	This could lead to loss of advantage of leverage in financing.

**(Source: Researcher's Field Survey, 2019)**

**2.2.1.3 Cash Conversion Cycle (CCC) Theory, (Richards and Laughlin 1980).**

The CCC theory approach was developed by Richards and Laughlin (1980). In their study, they saw that although a substantial portion of financial manager`s time are often spent on decision relating to short-term assets and liabilities, few attention has been given by most researchers in this direction. Concurrently, they describe receivables, inventories and payables as the constituents of the cash conversion cycle model.

The cash conversion cycle (CCC) theory explains the cycle or the difference in the length of time from when inventory purchased are paid for and when cash are collected for sales made. The theory measures the number of days the firm actually paid for the inventory acquired from suppliers and when revenue are collected from sales of finished products. It should be noted that each process of the cash conversion cycle takes a discrete period of time. Financial managers and all other financial analysts appreciate at slightest intuitive level that all working capital components do not have the same life span, and their exchange rate to usable flows of liquidity is never at the same speed (Richard & Laughlin, 1980). The cash conversion cycle model is depicted with the diagram below:



**Figure 2.3 Cash Conversion Cycle model**

(Source: Researcher’s, 2019)

#### **2.2.1.5 Resource Based Theory (Edith Penrose, 1959)**

Resource-based theory was postulated by Edith Penrose, it is used in this context to include the innate ability of financial managers of businesses as to utilize the short-term asset of the business (working capital) in an effective and efficient manner (Alvarez & Busenitz, 2001). Resource here means all productive assets the firm inputs in the production of an output. The resources of a firm include items capital equipment, individual employee's skills, intangible assets such as patents, brand names, goodwill and so on. Firm managers have individual-specific cognitive ability that facilitates the recognition of new opportunities, the psyche of making payments as well as effective resources assembling, and recovering of receivables as and when due to ensure effective management of working capital and ultimately the firm's profitability (Yusuf & Nasruddin, 2015).

#### **2.2.1.6 Trade-Off Theory of Liquidity (Modigliani and Miller, 1958)**

The trade-off theory of liquidity suggest that firm target an optimal liquidity position in order to balance the cost and benefits of holding cash. The theory explains that firm desires an optimum level of liquidity in essence of balancing the cost of holding cash with the benefit of holding cash. The cost of holding cash includes low rate of return of these assets, because holding cash leads to profit being tied down to cash. However the benefits of holding cash include transaction costs saved by firms in respect of raising funds from external sources.

The trade-off theory seeks to hold cash at an optimal level in order to finance any capital deficit, meet debt obligations and to take advantage of investment opportunities instead of issuing securities (equity and debenture). However holding on to cash may introduce a problem

associated with free cash flow. Jensen (1986) suggests that a liberal cash flow problem can be somehow managed by maximizing the stake of managers in the business or by maximizing the debt in the capital structure, and by so reducing the quantity of liberal cash available to managers. Most firms with high leverage attract high cost of servicing the debt thereby shrinking its profitability and liquidity and this may lead to a case of insolvency.

#### **2.2.1.7 Pecking Order Theory of Liquidity (Myers and Majluf, 1984)**

The pecking order theory was founded by Myers and Majluf in the year 1984. The pecking order theory states that firm issue debts and equities as a source of financing the company in situations where retained earnings and other sources of internal financing will be low to invest. Most managers desire to issue more of equities and debts as a means of financing rather than using cash. Managers prefer to finance deficit of capital by issuing SAFE security and debts (Myers & Majluf, 1984).

The pecking order theory arose as a result of asymmetric information between firm's financial managers and external investors. Sebastian (2010) examined the Netherlands' firm's liquidity and solvency and its effect on financial decision. He envisaged that, corporate liquidity and solvency interact through information, hedging, and leverage channels. The information and hedging channels increase the firm's market value equity which helps to ensure that dividend are paid regularly and also reduce erratic positions in cash flow.

### **2.2.1.8 Theoretical Framework**

From the above theories reviewed in the theoretical review, this study will be anchored on the Cash Conversion Cycle theory.

#### **Cash Conversion Cycle Theory**

This study utilizes this theory because it is a theory that covers the entire components of Working Capital Management as it investigates the Inventory Conversion period, Debtors' Collection Period and Creditors' Payment Period. It is an embodiment of all the components of Working capital management which is to be used to investigate the effect on financial performance. The Cash Conversion Cycle theory is suitable for this study.

### **2.3 Empirical Framework**

Evidence based studies has been carried out in the past to investigate the relationship between working capital management and financial performance of listed manufacturing firms. Profitability and liquidity are considered by most empirical studies to be universally associated with each other. (Raheman & Nasir 2007; Shin & Soenen, 1998). Thus we shall examine studies carried out on the relationship between working capital management and liquidity and also profitability.

Ahmad, Azim & Rehman (2013) investigated the impact of working management on operational liquidity position of manufacturing firms listed on the Karachi Stock Exchange in Pakistan. They made use of descriptive statistics, Pearson's correlation analysis and pooled regression analysis on the panel data of 148 manufacturing companies for a period of 6 years from 2006 to 2011.

They discovered a tight payment policy and working capital management efficiency have a significant impact on operational liquidity position of firms. They also discovered that conservative policy of current assets and aggressive policy of short-term financing have negative impact on a firm's operational liquidity position.

Egbide (2009) and Falope and Ajilore (2009) studied working capital management and profitability of listed companies in Nigeria, they used a cross sectional survey design of some quoted companies between 2005 – 2006 and 1995 - 2005. The data were analyzed using the ordinary least square regression analyses and panel data econometrics in a pooled regression; and the analysis revealed that “all the components of working capital management (ICP, DCP, CPP and CCC) affect profitability at varying levels of significance with debtor's collection period having the highest and significant impact” and revealed a negative impact. The same study of this scholars also showed an insignificant fluctuations in the effects of working capital management between small and large companies and suggests for this reason that, managers can create value for their shareholders if they can manage their working capital efficiently by providing proper handling of each working capital component and ensuring that they are operated at the optimal levels as well as reducing the debtors' collection period and inventory conversion period.

Chatterjee (2010) also supported the study of Egbide, Falope and Ajilore by studying the relationship between working capital management practices and the profitability of listed firms on the London Stock Exchange. Using a sample of 30 UK firms and engaging the Pearson correlation data analysis technique, the study confirms a significantly negative association

between profitability and working capital management variables. The study also found a significant negative relationship between profitability and liquidity.

Shin and Soenen (1998) in their study discovered that poor management of working capital has contributed to bankruptcy of many firms. They affirm that working capital management components must be given paramount importance by any firm that wants to be profitable. In support of shin and soenen, Enyi (2006), says that efficient management of a firm's stock of working capital determines the extent to which its financial fortune can be turned around as it affects its going concern status. According to Kargar and Bluementhal (1994), bankruptcy may also be likely for firms that put inaccurate working capital management procedures into practice, even though their profitability is constantly positive.

Eljelly (2004) examined the relationship between profitability and working capital management on a sample of 929 Saudi firms spread across three industries. Using correlation data analysis and regression data estimation technique, he found a significantly negative relationship between the firms' profitability and liquidity level, as measured by current ratio and cash conversion cycle. The study further observes variations in the cash conversion cycle among the industries used in the study and conclude that short cash conversion cycle and large firm size is associated with enhance profitability.

Barine (2012) carried out a study on the impact of WCM and profitability using 22 firms that were listed on the Nigerian Stock Exchange (NSE) as at the date the research was conducted. The data collection was based on the year 2010 annual report of this companies which were

analyzed using the one – tailed test and pooled variance. However, the findings of the study revealed that profit margin on the condition of effective working capital of quoted companies in Nigeria are not at the same rate with the required rate of return of these firms, which proffer inefficiency in the management of working capital. The study also recommended that others that listed firms in Nigeria should base their concentration on cash inflows that is, quicker cash collection period and available discount to improve their working capital conditions and by so doing improve their profitability.

Panigrahi (2014), investigate the relationship between working capital and liquidity, profitability and risk of bankruptcy as he conducted a case study of ACC Ltd for the period of 2000-01 to 2009-10. The findings revealed that even though the company was having a negative working capital most times, it was still capable of earning a good returns for its shareholders. This was suggested to have happened as a result of an aggressive working capital management policy adopted by the company.

Mugo (2014) also carried out a study of the implications of management of working capital on liquidity risk on commercial banks listed at the Nairobi Securities Exchange Kenya using 52 longitudinal design over 10 years from 2002 to 2011. Mugo (2014) studied 9 commercial banks using secondary data from financial statements by applying descriptive statistics and statistical inferences using correlation and regression analysis. The results of the study were that, cash conversion cycle and accounts receivable period had a significantly negative association with commercial banks' liquidity whilst accounts payables period had a significantly positive association with liquidity position. The research recommended that, commercials banks should maintain their current assets in order to meet short term obligation so that liquidity increases, by

shortening collection period from debtors and cash conversion cycle at the same time increasing payment period to creditors.

Akinyomi (2014) conducted a study on the effect of cash management on profitability of Nigeria manufacturing firms. The study examined the relationship between cash management and profitability in the Nigerian manufacturing firms by employing a correlational research design for 15 randomly selected firms that were listed in the Nigerian stock exchange from a period of 2008 to 2012. Correlation and regression analysis was carried out to test the effect between Cash Conversion Cycle on profitability of listed manufacturing firms. The result showed that Cash Conversion Cycle (CCC) has a significant positive and Negative relationship between Return on Equity (ROE) and Return on Asset (ROA) respectively.

Akindele and Odusina (2015) studied the relationship between WCM and the profitability of 25 Nigerian quoted firms employing the use of multiple regression analysis to analyze data extracted from the audited accounts and reports of the firms. The result of the study provided a negative relationship between the firms WCM and their profitability. The study suggested that the cash conversion cycle should be kept at the barest level.

Nasreen, Khanam and Pirzada (2014) carried out a research study on the effect of working capital management on the profitability of companies in Pakistan using a total of 45 companies' samples from 2008 to 2012 in the food sector which were quoted on Karachi Stock Exchange. The study adopted secondary data for data collection and these data were analyzed using the Ordinary Least Square (OLS) technique. The result proved that working capital management is a strong determinant of firms' profitability in the food sector in Pakistan. The study recommends that

firms in the food sector should strategies and obtain a means of efficient and effective management of their working capital components in order to improve their financial performance.

### 2.3.1 Empirical Summary

S/N	AUTHOR & YEAR	COUNTRY	TITLE	VARIABLES	METHODOLOGY	FINDINGS	SUGGESTION FOR FUTURE STUDY
1.	Ahmad, A., Azim, P., & Rehman, U.R.J. (2013)	Pakistan	Does Working Capital Management Affect the Operational Liquidity Position of Firms? A case of Pakistan	<b>Independent Variable:</b> Working Capital management.  <b>Dependent Variable:</b> Operational Liquidity Position.	This study made utilizes descriptive research design, Pearson's correlation analysis and pooled regression analysis on the panel data of 148 manufacturing companies for a period of 6 years from 2006 to 2011.	They found out that a tight payment policy and working capital management efficiency have a significant impact on operational liquidity position of firms. They also discovered that conservative policy of current assets and aggressive	More recent research should be carried out to test working capital management components on the liquidity of manufacturing firms.

			manufac turing Firms.			policy of short- term financing have negative impact on a firm's operational liquidity position.	
2.	Egbide, B.C., &Enyi, P.E. (2008).	Nigeria.	Working capital manage ment and profitabi lity of listed compani es in Nigeria.	<b>Independent Variable:</b> Working Capital Management.  <b>Dependent Variable:</b> Profitability.	Cross sectional survey design of some quoted firms was implemented from period of 2005- 2006 and 1995- 2005. The study also analyzed its data using ordinary least square regression and panel data econometrics in a pooled regression.	The analyses of the data of this study Revealed that “all the components of working capital management (ICP, DCP, CPP and CCC) affect profitability at varying levels of significance with debtor's collection period having the highest significant impact” and revealed a negative	A more comprehensive research study should be carried out to test the impact of working capital management on small and large companies.

						<p>impact. The study also discovered that the effect of working capital management varies between small and large companies.</p>	
3.	Chatterjee (2010).	United Kingdom.	<p>Relationship between working capital management and profitability of listed firms on London stock exchange.</p>	<p><b>Independent variable:</b> Working capital management.</p> <p><b>Dependent variable:</b> Profitability.</p>	<p>The study employed Pearson correlation data analysis to carry out the analysis of 30 sampled firms on the London Stock Exchange.</p>	<p>The study confirms a significantly negative association between profitability and working capital management variables. The study also found a significant negative relationship between profitability and liquidity.</p>	<p>Researchers should carry out further study to test the impact of working capital management on Liquidity of firms.</p>
4.	Eljelly(2004	Saudi	Liquidit	<b>Independent</b>	Correlation data	The study found	Study relating

	) Arabia.	y- Profitability Trade-off: An empirical investigation in an emerging market.	<p><b>variable:</b> Liquidity.</p> <p><b>Dependent variable:</b> Profitability.</p>	analysis and regression data estimation technique was used on a sample of 929 Saudi firms across three industries.	out a significantly negative relationship between the firms' profitability and liquidity level, as measured by current ratio and cash conversion cycle. The study further observes variations in the cash conversion cycle among the industries used in the study and conclude that short cash conversion cycle and large firm size is associated with enhance profitability.	to liquidity and profitability trade-off should be carried out to distinguish between the two concepts.
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5.	Barine, M. N. (2012)	Nigeria.	Working Capital Management Efficiency and Corporate Profitability:  Evidence from Quoted Firms in Nigeria	<p><b>Independent variable:</b> Working Capital Management</p> <p><b>Dependent variable:</b> Corporate Profitability.</p>			
6.	Panigrhi, A.K. (2014).		Relationship of Working Capital Management with Liquidity, Profitability and solvency : A case study of	<p><b>Independent variable:</b> Working Capital Management</p> <p><b>Dependent variable:</b> Liquidity and Profitability</p>	A case study of ACC Ltd for the period of 2000-01 to 2009-10.	The findings revealed that even though the company was having a negative working capital most times, it was still capable of earning a good returns for its shareholders.	<p>More Research work should be conducted to test the various working capital policies and how it affects the financial performance of firms.</p> <p>Also a more generalizable study should be carried out in</p>

			ACC Limited.				other to generalize the effect of working capital policies on the financial performance of firms.
7.	Mugo, R. (2014).	Kenya.	<p>What are the Implications of Working Capital Management on Liquidity Risk?</p> <p>A case of Listed Commercial Banks in Kenya.</p>	<p><b>Independent variable:</b> Working Capital Management</p> <p><b>Dependent variable:</b> Liquidity risk</p>	<p>Secondary data from the financial statement of 9 commercial banks in Kenya was used to carry out the study to test the implication of working capital management on liquidity risk. The study implemented descriptive statistics and statistical inference with the use of correlation and regression analysis to Analyze the data.</p>	<p>The result of the study reflected cash conversion cycle and accounts receivable period to have a significantly negative association with commercial banks' liquidity. However, account payable had a significant positive relationship with the liquidity of commercial banks.</p>	<p>Further research can be carried out for recent years to ascertain the effect of working capital management on recent years.</p>

8.	Akinyomi, O.J. (2014).	Nigeria.	Effect of Cash Management on the Profitability of Nigerian Manufacturing Firms.	<p><b>Independent variable:</b> Cash management.</p> <p><b>Dependent variable:</b> Profitability.</p>	A correlational research design for 15 randomly selected firms from 2008-2012 that were listed in the Nigeria Stock Exchange. The study analyzed the data using correlation and regression analysis.	The research result exposed a significant positive relationship with Return on Equity (ROE) and a significant negative relationship with Return on Asset	Other Working Capital components can be carried individually to test the effect of various working capital management on various profitability measure to ascertain the in depth view of the work
9.	Akindele, J. A., & Odusina, O. (2015).	Nigeria	Working Capital Management and Firm Profitability: Evidence from Nigerian Quoted Companies.	<p><b>Independent variable:</b> Working Capital Management</p> <p><b>Dependent variable:</b> Firms Profitability</p>	Descriptive research study was conducted for 25 Nigerian quoted firms employing the use of multiple regression analysis to analyze data extracted from the audited accounts and reports of the firms.	The result of the study provided a negative relationship between the firms WCM and their profitability. The study suggested that the cash conversion cycle should be kept at the barest level.	Further studies can be carried for non-manufacturing sectors to test the impact of working capital management on the profitability of these firms.

10.	Nasren, S., Khanam, F., &Pirzada, S.S. (2014).		Impact of Working Capital Manage ment on Firm's Profitabi lity.	<b>Independent variable:</b> Working capital Management  <b>Dependent variable:</b> Firm's performance	Descriptive Research was conducted using a total of 45 companies' samples from 2008 to 2012 in the food sector which were quoted on Karachi Stock Exchange. The study adopted secondary data for data collection and these data were analyzed using the Ordinary Least Square (OLS) technique.	. The result proved that working capital management is strong determinant of firms' profitability in food sector in Pakistan.	Further and resent studies can be carried out to test the impact of working capital management on the firm's performance.
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## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Research methodology**

This chapter of the study is envisaged to provide answers to the research questions in order to fulfill the research objectives which were presented in chapter one of this study. The research methodology discusses the following aspects; research design, population of study, sources of data, sample size and techniques, data collection method and method of data analysis.

#### **3.1 Research design**

The study will apply the use of secondary data by adopting ex-post facto research design which will make use of panel data for the periods of 2012-2018 drawn from audited financial statement of listed manufacturing goods sector firms in the Nigeria stock exchange. The audited financial statements of the listed companies contains data for analyzing both the dependent variable which is financial performance (ROA) and also the independent variable which is Working Capital Management.

**Table 3.1**

<b>TYPES OF VARIABLES</b>	<b>VARIABLES</b>	<b>ABBREVIATION</b>	<b>MEASUREMENT</b>
Dependent	Return On Equity	ROA	$\frac{\text{Net profit before interest and tax}}{\text{Total assets}}$
Independent	Inventory Conversion Period	ICP	$\frac{\text{Average inventories} \times 365 \text{days}}{\text{Cost of sales per annum.}}$
	Debtors Collection Period	DCP	$\frac{\text{Trade debtors} \times 365 \text{days}}{\text{Sales}}$
	Creditors Payment Period	CPP	$\frac{\text{Trade creditors} \times 365 \text{days}}{\text{Cost of sales}}$
	Cash Conversion Cycle	CCC	Average account receivable + Average inventory – Average account payable.

### 3.2 Population of study

The population of this study covers 40 manufacturing companies from the consumer goods sector, industrial goods sector and the agricultural goods sector that were listed in the Nigeria Stock Exchange (NSE) as at the date of the research. The target population of the study comprises of the below listed companies.

### 3.3 Sources of data

The data relating to both the dependent and independent variables of this study will be derived from the audited financial statement of the listed companies in Nigerian Stock Exchange selected and also from the annual reports of these selected companies.

### 3.4 Sample size and sampling techniques

This research will utilize a sample of 25 listed manufacturing companies from the population of 40 manufacturing companies from the consumer goods sector, industrial goods sector and agricultural goods sector that was listed in the NSE on the date of the research which could be regarded as a fair representation of the population of this study. The selected samples for this study is to be drawn from the population using stratified simple random sampling technique based on the fact that their audited financial statements are timely and readily available on the Nigerian Stock Exchange website.

The table below depicts the sampling technique and the sample size of the study.

**Table 3.2**

S/N	SECTORS	NUMBER OF COMPANIES	NUMBER OF SAMPLED COMPANIES
1.	Agriculture	5	3
2.	Consumer goods	21	13
3.	Industrial goods	14	9
	<b>TOTAL</b>	<b>40</b>	<b>25</b>

The selected 25 manufacturing companies are presented in the table below:

**Table 3.3**

Berger Paint Nigeria Plc
Beta Glass Plc
Cadbury Nigeria Plc
Champion Breweries Plc
CutixPlc

Dangote Cement Plc
Dangote Flour Mills Plc
Dangote Sugar Refinery Plc
DN Meyer Plc.
First Aluminium (Nigeria) Plc
Flour Mills of Nigeria Plc
FTN Cocoa Processors Plc
Greif Nigeria Plc
Guinness Nigeria Plc
Honeywell Floor Mill Plc
Lafarge Africa Plc
Livestock Feeds Plc
McNichols Consolidated Plc
NASCON Allied Industries Plc
Nestle Nigeria Plc
Nigerian Breweries Plc
Okomu Oil Palm Company Plc
Portland Paints & Products Nig. Plc
Unilever Nigeria Plc
Vitafoam Nigeria Plc

### **3.5 Method of data collection**

The study will source its data using secondary data collection method. Annual financial reports of listed industrial goods sector companies were downloaded from the Nigeria stock exchange website. The data on sales, cost of sales, inventories, account payable, account receivables, current assets and current liabilities was extracted from the annual statement of the selected companies to test the independent variable while the dependent variable which is financial performance will be tested by profitability (ROA). The Profitability ratio (ROA), and working

capital components were calculated from the annual financial statement of the selected listed manufacturing companies using Microsoft excel after extracting relevant data.

### 3.6 Method of data analysis

Data were computed using the relevant profitability ratio and the components of working capital management ratios. This ratios was then analyzed using descriptive and inferential analysis, regression analysis will be carried out on SPSS to answer the research questions.

### 3.7 Model Specification

The dependent variable of this study is financial performance consisting of profitability and liquidity which are operationally defined using Return on Asset (ROA). However, the independent variable which is working capital management are measured by the working capital components which are; inventory conversion period (ICP), Debtors Collection Period (DCP), Creditors Payment Period (CPP), and Cash Conversion Cycle (CCC). The study will make use of profitability ratio by computing Return on Equity (ROA) to test financial performance. However, the model adopted and adapted to this study is stated below:

$$FPF = f (WCM)$$

Where:

FPF = Financial Performance;

WCM = Working Capital Management;

$$ROA = \alpha + \beta_1 ICP + \beta_2 DCP + \beta_3 CPP + \beta_4 CCC + \mu \dots \dots \dots 1$$

Where:

ROA = Return on Asset;

ICP = Inventory Conversion Period;

DCP = Debtors Collection Period;

CPP = Creditors Payment Period;

CCC = Cash Conversion Cycle;

$\alpha$  is constant,

$\mu$  is the error term

$\beta_1, \beta_2, \beta_3$  and  $\beta_4$  are the coefficients of ICP, DCP, CPP and CCC respectively.

### **3.8 Measurement of model**

The variables in the model will be summarized and measured using simple linear regression analysis which is supported by the Statistical Package for Social Sciences (SPSS) in order to test the relationship between the dependent and independent variables. However, the validity and reliability of the hypotheses statements will be tested using a type of parametric technique known as Analysis of Variance (ANOVA) at 0.05 significant levels.

The following data will be employed in the course of this study and are thus explained below as:

#### **Return on Asset (ROA)**

The Return on Asset (ROA) is a profitability ratio that measures how a firm can realize return or profit by utilizing the resources provided by the total assets employed by company. It also indicates the usage of the total assets of the company to generate returns for the gain of the firm.

It is calculated by dividing net profit before interest and tax (PBIT) by the total assets employed by the firm.

### **Inventory Collection Period (ICP)**

Inventory Collection Period (ICP) is the time required to obtain materials for a product, manufacture it, and sell it. The Inventory Conversion Period (ICP) is exactly the time period during which a company must invest cash while it converts materials into a sale. It is usually calculated by dividing the average inventories by the cost of sale per annum multiply by the 365days.

### **Debtors Payment Period (DCP)**

The term Debtor Collection Period indicates the average amount of time taken to collect trade debts for customers. In other words, a reducing period of time indicates increasing efficiency. It provides the enterprise with a yardstick of comparing the real collection period with the granted or theoretical credit period.

The Debtors Collection Period is usually calculated by dividing the trade debtors by sales per annum and multiplying it by 365days.

### **Creditors Payment Period (CPP)**

The Creditors Payment Period explains the number of days it takes a business to settle its debts with trade suppliers. The Creditors Payment Period (CPP) is a different ratio to the Debtors Collection Period (DCP) and it gives an insight into whether a business is taking full advantage

of trade credit available to it. The Creditors Payment Period is calculated by dividing trade payable by cost of sales multiply by 365days.

### **Cash Conversion Cycle (CCC)**

The cash conversion cycle (CCC) is a metric that expresses the time (measured in days) it takes for a company to convert its investments in inventories and other resources into real monetary value (cash) from sales. It is measured as average trade receivable plus average inventories minus average trade payables.

## CHAPTER FOUR

### DATA PRESENTATION, DATA ANALYSIS AND RESULT INTERPRETATION

This chapter covers the data presentation, data analysis and the result interpretation. The chapter comprises of the Data presentation, analysis and interpretation section and the hypothesis testing and discussion section.

#### 4.1 Data Presentation, Analysis and Interpretation

The descriptive statistics below show the mean, standard deviation and the number of observation carried out for the study.

**Table 4.1** Descriptive Statistics

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
ROA	175	-.68	1.37	.0920	.18610
ICP	175	20.62	468.77	95.4667	61.49950
DCP	175	.03	242.46	34.3482	37.21492
CPP	175	.50	347.68	62.7391	54.78093
CCC	175	-17.22	17.74	12.4726	7.57476
Valid N (listwise)	175				

(Source: Researcher's field study, 2019)

Table 4.1 shows the summary of the data obtained from the published audited financial statements of the 25 listed manufacturing companies under study for a period of 7 years. The study contains a total of 175 observations.

The mean value for Return on Asset (ROA) which is the dependent variable is 0.0920 at a minimum point of -0.68 and maximum values of 1.37 with standard deviation of 0.18610. The

mean value shows that the average Inventory Conversion Period among the studied manufacturing firms is 95.4667 days at minimum value of 20.62 days and maximum of 468.77 days. The interpretation of the Inventory Conversion Period is that the sampled firms wait 95.4667 days to convert their inventories to either cash or debt with a standard deviation of 61.49950 representing more than 100%

Debtors Collection Period has a mean value of 34.3482 days at a minimum and maximum value of 0.03 days and 242.46 days respectively. This means that the sampled firm wait 34.3482 days on average to collect cash from credit sales made, with a standard deviation of 37.21492 representing above 100% indicating that there is much variation on the Debtors Collection Period of the sampled companies.

Creditors Payment Period has a mean of 62.7391 days at a minimum point of 0.50 days and maximum of 347.68 days with a standard deviation of 54.78093 representing above 100% showing that there is much variation among the Creditors Payment Period of the sampled manufacturing firms.

Also the Cash Conversion Cycle has a mean value of 12.4726 times at a minimum and maximum value of -17.22 times and 17.74 times respectively with standard deviation of 7.57476.

#### **4.2 Test for Hypothesis and Discussion**

**OBJECTIVE 1:** To assess the effect of inventory conversion period (ICP) on the financial performance of listed manufacturing firms in Nigeria.

### Hypothesis 1:

**H<sub>0</sub>1:** There exist no significant relationship between inventory conversion period (ICP) and the financial performance of listed Industrial goods companies in Nigeria.

**H<sub>1</sub>1:** There exist a significant relationship between inventory conversion period (ICP) and the financial performance of listed industrial goods companies of Nigeria.

**Table 4.2.1 Hypothesis One**

Variables	Unstandardized Coefficient		Standardized coefficients	t-stat	Probability/sig
	$\beta$	Std. Error	Beta		
Constant	0.152	0.026		5.965	0.000
ICP	-0.001	0.000	-0.209	-2.806	0.006
<b>Model summary</b>					
R	0.209				
R2	0.044				
Adjusted R2	0.038				
Standard error	0.18253				
F-Statistics	7.871				
Prob.(F-Stat)	0.006				
Observations	175				

(Source: Researchers computation, 2019)

The above table is an extract of the model summary which reflects the predictive power of the model. R which is the correlation coefficient between the dependent variable (Return on Asset) and the independent variable(s) (the predictor(s)). The sig of R indicates the direction of the relationship (positive or negative). The value of R range from -1 to 1. The absolute value of R indicates the strength, with larger absolute value indicating strong relationship.

In Table 4.2.1,  $R = 0.209$ , which signifies that there is a positive relationship between the Return on Asset (ROA) and Inventory Conversion Period (ICP), while its value shows moderate relationship.

The R squared (coefficient of determination) shows the degree of linear correlation of variables (goodness of fit) in regression analysis. This is the proportion of variation in the dependent variable explained by the regression model. In other words, it shows the extent to which the independent variable(s) can explain the variance in the dependent variable. The sample R squared tends to be an optimistic estimate of how well the model fits the population.

Table 4.2.1 shows R square of 0.044, which means that Inventory Conversion Period (ICP) can only explain 4.4% variation in the value of return on asset while the remaining 95.6% are due to factors not included in the model.

Adjusted R square only adjusts for the number of variables in the regression model. Standard error of the estimate is the standard deviation of the residuals. It attempts to correct R squared to more closely reflect the goodness of fit of the model. It is also R squared value adjusted for the number of variables in the regression model. The value of Adjusted R square in this table is 0.038

The standard error of estimates is the same as the standard deviation of the residuals. As R squared increases, the standard error of the estimate decreases. It therefore means that a better fit ensures less estimated error. It is an important indicator of how precise an estimate of the population parameter is to the sample statistic.

The table 4.2.1 also summarizes the ANOVA table which explain the overall significance of the model. The F-statistics is the regression mean square (MSR) divided by the residual mean square. F- Statistics determine whether the model is a good fit for the data based on its significance level. A significant value of F- statistics shows that the model is better at predicting the outcome value of the dependent variable than its average. If the significance value of the F-statistics is smaller than 0.05 then the independent variable(s) is significant to explaining the variation in the dependent variable and the null hypothesis is rejected. Table 4.1.1 from the model summary show that a significance value of 0.006 which is less than 0.05. It suggests that there is a significant relationship between Inventory Conversion Period and financial performance (ROA).  $H_0$  is therefore rejected and  $H_1$  is accepted.

## **Hypothesis 2:**

**OBJECTIVE:** To determine the effect of debtors collection period (DCP) on the financial performance of listed manufacturing firms in Nigeria.

**$H_0$ 2:** There is no significant difference between debtor's collection period (DCP) and the financial performance of listed manufacturing firms in Nigeria.

**$H_1$ 1:** There is a significant difference between debtor's collection period (DCP) and the financial performance of listed manufacturing firms in Nigeria.

**Table 4.2.2: Hypothesis Two**

Variables	Unstandardized Coefficient		Standardized coefficients	t-stat	Probability/sig
	$\beta$	Std. Error	Beta		
Constant	0.135	0.019		7.276	0.000
DCP	-0.001	0.000	-0.252	-3.429	0.001
<b>Model summary</b>					
R	0.252				
R2	0.064				
Adjusted R2	0.058				
Standard error	0.1806				
F-Statistics	11.761				
Prob.(F-Stat)	0.001				
Observations	175				

(Source: Researcher's field study, 2019)

Table 4.2.2, presents the effect of Debtors Collection Period on the dependent variable (Return on Asset). However, from table 4.2.2, Standard coefficient  $\beta = -0.252$  and R value is 0.252, this implies that there is a negative correlation between the Debtors Collection Period (DCP) and Return on Asset (ROA) as it has a negative standard coefficient  $\beta$  value of 25.2%. From the above table, R square is 0.064 which means that Debtors Collection Period (DCP) will only be able to explained 6.4% variation of financial performance (Return on Asset) while the remaining 93.6% are due to other factors not included in the model. Although, the coefficient of determination shows that the model has a weak explanatory power, the probability of the F-statistic of 0.001 shows that the regression result is statistically significant because this is less than 5% , the level of significance adopted for this study. . The 0.001 probability of the F-

statistics therefore indicate the acceptance of the alternative hypothesis ( $H_1$ ) of existence of significant relationship and the rejection of the null hypothesis ( $H_0$ ).

**Hypothesis 3:**

**OBJECTIVE:** To ascertain the effect of creditors payment period (CPP) financial performance of listed manufacturing firms in Nigeria.

**H<sub>03</sub>:** No significant relationship exists between creditor’s payment period (CPP) and the financial performance of listed manufacturing firms in Nigeria.

**H<sub>1</sub>:** No significant relationship exists between creditor’s payment period (CPP) and the financial performance of listed manufacturing firms in Nigeria.

**Table 4.2.3 Hypothesis Three**

Variables	Unstandardized Coefficient		Standardized coefficients	t-stat	Probability/sig
	$\beta$	Std. Error	Beta		
Constant	0.079	0.021		3.697	0.000
CPP	0.000	0.000	0.060	0.787	0.433
<b>Model summary</b>					
R	0.060				
R <sup>2</sup>	0.004				
Adjusted R <sup>2</sup>	-0.002				
Standard error	0.1863				
F-Statistics	0.619				
Prob.(F-Stat)	0.433				
Observations	175				

(Source: Researchers composition, 2019)

The sign of the coefficient, that is  $\beta = 0.60$  shows that Creditors Payment Period has a positive relationship with that of its dependent variable (Return on Asset). However with a value of 0.004 for R square, it revealed that Creditor's Payment Period (CPP) can only explain a 0.4% variation in Return on Asset which shows that model has a weak explanatory power, the probability of the F- statistic of 0.619 with p-value of 0.433 which exceed the 5% level of significance adopted for this study. It therefore means that the regression result is statistically insignificant because this is more than 5%, the level of significance adopted for this study.

This result means  $H_0$  should be accepted while  $H_1$  should be rejected due to no significant relationship between creditors Payment Period (CPP) and Return on Asset (ROA).

#### **Hypothesis 4:**

#### **OBJECTIVE:**

**H<sub>0</sub>4:** There is no significant difference between cash conversion cycle (CCC) and the financial performance of listed manufacturing firms in Nigeria.

**H<sub>1</sub>1:** There is a significant difference between cash conversion cycle (CCC) and the financial performance of listed manufacturing firms in Nigeria.

**Table 4.2.4 Hypothesis Four**

Variables	Unstandardized Coefficient		Standardized coefficients	t-stat	Probability/sig
	$\beta$	Std. Error	Beta		
Constant	0.162	0.027		6.118	0.000
CCC	-0.006	0.002	-0.229	-3.095	0.002
<b>Model summary</b>					
R	0.229				
R2	0.052				
Adjusted R2	0.047				
Standard error	0.18167				
F-Statistics	9.577				
Prob.(F-Stat)	0.002				
Observations	175				

**Source:** Researchers composition, 2019

The sign of the coefficient, that is  $\beta = -0.229$  shows that Cash Conversion Cycle has a negative relationship with that of its dependent variable (Return on Asset). However with a value of 0.047 for R square revealed that Cash Conversion Cycle (CCC) can only explain a 0.47% variation in Return on Asset which shows that model has a weak explanatory power. However, the probability of the F- statistic of 9.577 with p-value of 0.002 which is less than the 5% level of significance adopted for this study. It therefore means that the regression result is statistically significant because this is less than 5%, the level of significance adopted for this study.

This result means  $H_0$  should be rejected while  $H_1$  should be accepted due to the negative significant relationship between Cash Conversion Cycle (CCC) and Return on Asset (ROA).

#### **4.2.2 Discussion of Findings**

The linear regression estimate of model 1 shows that there is a negative relationship between Inventory Conversion Period (ICP) and financial performance measured by Return on Asset (ROA). The probability of t-statistic of Inventory Conversion Period (ICP) shows that ICP have significant negative effect on financial performance which is measured by Return on Asset (ROA) with p-values less 5% level of significance. Furthermore the adjusted R square showed that about 3.8% variation in Return on Asset can be attributed to Inventory Conversion Period (ICP), While the remaining 96.2% variation in financial performance measured by Return on Asset (ROA) are caused by other factors not included in the model. Although the coefficient of determination shows model 1 has a weak explanatory power, the probability of F-statistic of 0.006 shows that the regression result is statistically significant because this is less than 5% the pre-set level of significance for this study. Hence Inventory Conversion Period significantly affect financial performance in the manufacturing sector in Nigeria

The linear regression estimate of model 2 shows that there is a negative relationship between Debtors Collection Period and financial performance measured by Return on Asset. The probability of t-statistic of Debtors Collection Period shows that Debtors Collection Period has a significant negative effect on financial performance measured by return on asset with p-values less 5% level of significance. This is in consonance with findings of (Mugo, 2014), who found out that a negative significant relation exist between debtors collection period and financial performance. Also the adjusted R square showed that about 5.8% variation in financial performance measured by ROA can be attributed to DCP. While the remaining 94.2% variation

in financial performance are caused by other factors not included in the model. Although the coefficient of determination shows model 2 has a weak explanatory power, the probability of F-statistic of 0.001 shows that the regression result is statistically significant because this is less than 5% the pre-set level of significance for this study. Hence Debtors Collection Period significantly affect financial performance in the manufacturing sector in Nigeria.

The linear regression estimate of model 3 shows that there is a positive relationship between Creditor Payment Period and financial performance measured by return on asset. The probability of t-statistic shows that Creditors Payment Period and Return on Asset has an insignificant positive effect on organizational performance with p-values more 5% level of significance. Furthermore the adjusted R square showed a very weak predictive indicator of about 0.4% variation in financial performance can be attributed to Creditors Payment Period. While the remaining 99.6% variation in financial performance are caused by other factors not included in the model. Since the coefficient of determination shows model 3 has a weak explanatory power, the probability of F-statistic of 0.433 shows that the regression result is statistically insignificant because this is more than 5% the pre-set level of significance for this study. Hence Creditors Payment Period insignificantly affect financial performance in the manufacturing sector in Nigeria.

The linear regression estimate of model 4 shows that there is a negative relationship between Cash Conversion Cycle and financial performance measured by Return on Asset. The probability of t-statistic of Cash Conversion Cycle shows that Cash Conversion Cycle has a significant

negative effect on financial performance measured by return on asset with p-values less 5% level of significance. This is in agreement with Akinyomi (2014), the study share the same relationship of Cash Conversion Cycle and financial performance measured in terms of profitability. He found a negative significant relationship between Cash Conversion Cycle (CCC) and profitability (ROA). Also the adjusted R square showed that about 5.2% variation in financial performance measured by ROA can be attributed to Cash Conversion Cycle. While the remaining 94.8% variation in financial performance are caused by other factors not included in the model. Although the coefficient of determination shows model 4 has a weak explanatory power, the probability of F-statistic of 0.002 shows that the regression result is statistically significant because this is less than 5% the pre-set level of significance for this study. Hence Cash Conversion Cycle significantly affect financial performance in the manufacturing sector in Nigeria.

**Table 4.3 Hypothesis Findings**

<b>S/N</b>	<b>HYPOTHESIS(NULL)</b>	<b>RESULT</b>
1.	There is no significant relationship between Inventory Conversion Period (ICP) and financial performance of listed manufacturing firms in Nigeria.	Not accepted
2.	There is no significant difference between debtor's collection period (DCP) and the financial performance of listed manufacturing firms in Nigeria.	Not accepted
3.	No significant relationship exists between creditor's payment period (CPP) and the financial performance of listed manufacturing firms in Nigeria.	Accepted
4.	There is no significant difference between cash conversion cycle (CCC) and the financial performance of listed manufacturing firms in Nigeria.	Not Accepted

(Source: Researcher's Field Survey, 2019)

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter deals with the summary of the study, as well as conclusion and recommendations made, the study's contribution to knowledge and suggestions for further research.

#### **5.1 Summary of the Study**

This study investigated the effect of working capital management on the financial performance of listed manufacturing firms in Nigeria. The study was undertaken for the period of 2012-2018.

This study was constructed under five chapters ranging from chapter one which is the introduction, Chapter two which is the literature review, chapter 3 which is the research methodology, chapter four which is the data presentation, data analysis and result interpretation and chapter five which is the summary, conclusion and recommendation. However, these various chapters are adequately summarized in an orderly manner below.

Chapter one which is the introduction of the study viewed the background of the study, statement of the problem, objectives of the study were clearly stated, research question were drawn to fit the objectives, hypothesis to navigate the investigation was formulated, the significance of the study, the scope of the study and the limitation of the study were discussed.

Chapter two which is the literature review was structured according to three major components for this study. These components are conceptual review which reviewed major concepts of inventory conversion period, debtors collection period, creditors payment period, cash conversion cycle, financial performance, profitability and liquidity. Theoretical review was

carried out by reviewing agency theory, stakeholders theory, risk and returns theory, cash conversion cycle theory, resource based theory, trade-off theory of liquidity and the pecking order theory of liquidity of which the cash conversion cycle theory was adopted to anchor the study on. Empirical review reviewed past research studies on working capital management components, profitability, liquidity and financial performance.

Chapter three which is titled research methodology presents the methodology for carrying out the study. Essentially, this chapter discusses the design, population, sources of data, sample size and technique, method of data collection and analysis, model specification and measurement of model. An appropriate sample size was determined and selected using stratified and simple random sampling method. The functional relationship between the dependent and independent variable is presented in the model specification. The data used was a descriptive research design and the data was analyzed using regression analysis.

The chapter four reflects the data presentation, data analysis using SPSS and interpretation of the data collected.

The chapter five gives a detailed summary of the research study with the appropriate findings and their implications, draws conclusion and recommendations were made. This chapter also emphasized the limitations of the study, contribution to knowledge made by the study and suggestion for further study to be carried out.

### **5.1.1 Summary of findings**

The re summary of the findings of the study are presented below:

The study discovered that there is a significant negative relationship between Inventory Conversion Period (ICP) and financial performance measured by ROA. This is revealed by R

square of 3.8% which show that a 3.8% variation in ROA is can be attributed to ICP while the remaining 96.2% is caused by other variables not included in the model.

The study also showed that a negative significant relationship exist between Debtors Collection Period (DCP) and Financial performance of listed manufacturing firm in Nigeria with an R square of 5.8%.

The study revealed that there is no significant relationship between Creditors Payment Period (CPP) and financial performance of listed manufacturing firms in Nigeria with an R square of 0.4%.

The study also shows that a negative significant relationship exist between Cash Conversion Cycle (CCC) and financial performance of listed manufacturing firms in Nigeria with R square of 5.2%.

## **5.2 Conclusion**

Based on the findings from this study, the relationship between working capital management and financial performance of listed manufacturing firms in Nigeria from 2012 to 2018 has been adequately explored using data collected from the audited financial statements of Twenty five (25) out of the forty (40) listed Consumer goods sector, industrial goods sector and agricultural goods sector companies in the Nigerian Stock Exchange.

It was discovered that Inventory Conversion Period, Debtors Collection Period and Cash Conversion Cycle are negatively related to financial performance of the manufacturing firms while Creditors Payment Period is positively insignificantly related to financial performance.

The negative relationship between Inventory Conversion Period shows that the manufacturing firms have effective and efficient system put in place that ensures that the firm inventories are immediately transform into cash or debt within the short period of days pending on the situation.

The negative relationship between Debtors Collection Period also shows that an effective laid down policies for ensuring quick collection of cash from credit sale is operational in the firms.

Also, since Creditors Payment Period has a positive relationship with the financial performance of the manufacturing firms, it means that as Creditors Payment Period increases, the firm's financial performance also improves. However, the Creditors Payment Period is insignificant in determining the effect on financial performance.

The study therefore concludes that the findings for this study should be of paramount importance to the board of directors (the management) and stakeholders of manufacturing firms in Nigeria because the effective and efficient management of working capital components will lead to an increase in the financial performance of these firms.

### **5.3 Recommendations**

Consequent based on the findings of this study, it is recommended that manufacturing companies should continue to maintain or reduce further, the Debtors' Collection Period so as to be liquid enough to finance short term debt obligation and take opportunity of investment opportunities. Also, Creditors Payment Period in days should be increased so as to better enhance the financial performance of manufacturing firms since it is not significantly influencing the financial performance of these firms.

Production managers should ensure that inventories in should ensure that an appropriate amount of inventories is kept in order to avoid stock obsolesce caused by keeping too much of inventories which could lead to decrease in profitability.

Manufacturing firms should develop a strategy to maximize cash conversion cycle as this will increase the firm's performance. Base On the findings of this study it has been discovered that Working Capital Management has a significant effect on the financial performance of listed manufacturing firms and it was recommended that firms in the manufacturing sector should to give due relevance and attention to working capital management in order to improve their financial performance which is profitability and liquidity.

#### **5.4 Contribution to Knowledge**

This study contributed to knowledge by adding to what other prominent scholars has carried out in the past on working capital management and its effect on financial performance by carry out a more recent work on this topic from the period of 2012-2018. The study will help add to manufacturing firm's management knowledge on how they can optimize their financial performance by adequately managing the working capital components of the firm.

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

This study is limited to only manufacturing firms for the period 2012-2018. The study investigates manufacturing firm's performance, however only the profitability aspect of the firm's performance is looked into in determining the effect of working capital management on financial performance.

## **5.6 Suggestion for further studies**

From the limitation of the study, it has been discovered that only the profitability aspect of firm's performance has been covered by this study, however a further research study can carry out to investigate the impact of other component of firm's performance like the liquidity of the firm. Also further studies can be carried out in other sectors other than the manufacturing sector to test the effect of working capital management on the performance of firms in Nigeria.

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## Appendix

### Appendix 1

		NET PBIT	TOTAL ASSETS	INVENTORIES	DEBTORS	CREDITORS	SALES	COST OF SALES
COMPANIES	YEARS	₦'000	₦'000	₦'000	₦'000	₦'000	₦'000	₦'000
Berger Paint Plc.	2011			560,291	106,220	249,457	2,375,563	1,415,962
	2012	284,465	2,848,114	537,857	217,412	552,734	2,513,664	1,536,612
	2013	356,096	1,978,847	512,204	295,431	566,185	2,708,448	1,639,886
	2014	249,258	3,640,145	523,921	492,984	203,394	3,082,930	1,736,060
	2015	565,212	3,895,870	459,526	264,260	218,567	3,022,264	1,643,696
	2016	271,770	4,102,265	569,475	204,319	151,033	2,602,824	1,491,193
	2017	339,456	4,311,424	574,991	143,126	178,196	3,092,445	1,819,368
	2018	454,328	4,535,299	606,712	149,297	201,353	3,377,223	1,896,862
Beta Glass Plc.	2011			2,374,900	1,717,233	1,134,697	12,726,227	9,568,741
	2012	1,857,089	22,456,567	2,649,148	2,910,712	2,046,935	12,932,549	9,811,848
	2013	2,043,293	27,166,481	3,301,032	2,430,164	2,448,810	14,096,123	10,870,208
	2014	3,340,660	26,928,387	2,295,922	2,166,094	1,974,446	16,632,879	12,184,227
	2015	3,114,795	27,171,069	3,479,878	2,587,882	2,338,765	15,953,224	12,247,347
	2016	5,215,253	33,184,130	4,210,668	3,162,845	2,160,527	19,091,192	15,145,377
	2017	5,854,740	38,211,613	5,025,216	4,858,492	3,128,104	22,186,258	16,938,395
	2018	7,188,181	46,079,629	6,239,740	4,105,372	8,900,101	26,321,014	19,940,375

Cadbury Nigeria Plc	2011			1,962,508	2,611,421	2,111,296		
	2012	6,438,262	39,811,415	1,810,778	3,546,526	3,172,862	31,231,751	19,755,275
	2013	7,421,477	43,172,624	1,880,654	3,937,307	4,882,356	35,760,753	22,660,657
	2014	2,385,891	28,811,286	2,392,926	3,863,607	4,361,036	30,518,586	22,134,829
	2015	1,577,412	28,417,005	1,936,455	3,667,111	3,407,762	27,825,194	18,894,967
	2016	(562,871)	28,409,000	5,020,938	4,367,299	4,164,468	29,979,410	23,119,007
	2017	350,317	28,423,122	6,252,367	3,932,573	3,287,226	33,079,446	25,644,312
	2018	350,317	1,222,831	5,865,105	2,952,425	5,023,217	35,973,479	28,017,413
Champion Breweries Plc	2011			321,348	30,349	337,765		
	2012	(1,928,865)	6,799,200	235,879	16,021	289,445	1,785,345	2,251,727
	2013	(1,730,432)	9,137,716	305,631	22,270	429,707	2,233,259	2,207,324
	2014	(1,061,783)	9,592,381	354,286	46,428	139,051	3,302,383	2,662,451
	2015	248,443	10,329,160	350,133	87,363	303,499	3,501,845	2,502,147
	2016	681,284	9,961,240	530,410	133,398	723,443	3,864,943	2,797,890
	2017	648,243	10,088,861	592,767	415,763	487,770	4,777,313	3,390,692
	2018	(223,784)	10,487,010	739,277	284,425	851,911	4,763,757	3,572,665
Curtix Plc.	2011			335,394	244,448	43,879		
	2012	153,178	941,609	335,394	244,448	43,879	1,572,976	1,182,449
	2013	271,557	1,073,865	280,496	398,345	87,058	1,929,477	1,375,821

	<b>2014</b>	316,752	1,744,670	447,060	491,551	119,135	2,234,959	1,593,424
	<b>2015</b>	313,818	1,968,813	616,009	87,049	14,426	2,358,412	1,719,404
	<b>2016</b>	415,103	1,891,720	487,959	82,334	8,242	2,835,862	2,102,510
	<b>2017</b>	471,729	2,329,792	1,103,158	111,340	68,083	3,675,712	2,670,066
	<b>2018</b>	799,070	2,836,262	1,317,958	58,403	197,839	5,057,374	3,536,685
Dangote Cement Plc.	<b>2011</b>			13,438,142	3,394,812	36,181,236	241,405,977	97,707,942
	<b>2012</b>	148,104,709	639,466,109	30,853,539	4,990,785	54,110,567	285,635,278	106,326,020
	<b>2013</b>	201,079,677	820,477,742	23,576,746	9,120,840	74,511,377	371,551,567	115,892,838
	<b>2014</b>	190,908,000	963,441,000	36,315,000	2,398,000	33,085,000	371,534,117	128,583,576
	<b>2015</b>	193,698,000	1,124,475,000	38,369,000	3,924,000	30,341,000	389,215,000	130,418,000
	<b>2016</b>	183,730,000	1,502,564,000	55,850,000	10,454,000	55,660,000	426,129,000	178,129,000
	<b>2017</b>	305,902,000	1,611,087,000	62,259,000	10,180,000	50,235,000	552,364,000	158,594,000
	<b>2018</b>	335,410,000	1,721,974,000	59,820,000	7,036,000	41,157,000	618,301,000	170,288,000
Dangote Flour Mills Plc	<b>2011</b>			4,899,135	9,353,579	3,522,678		
	<b>2012</b>	(4,264,583)	59,191,842	7,317,448	9,007,011	3,758,152	29,859,976	28,740,533
	<b>2013</b>	(5,647,490)	59,800,099	7,686,391	8,677,964	5,493,944	23,079,590	22,728,987
	<b>2014</b>	(6,055,112)	53,563,743	4,052,548	9,795,324	3,874,662	31,704,340	29,321,039
	<b>2015</b>	(13,789,416)	46,344,429	4,183,629	8,323,287	45,760	36,094,021	33,089,466
	<b>2016</b>	11,588,399	76,605,288	8,623,532	10,112,046	224,563	62,613,607	44,766,997

	<b>2017</b>	19,040,547	128,944,816	23,153,381	4,109,619	1,816,485	108,086,289	81,149,128
	<b>2018</b>	(1,009,620)	120,942,220	24,223,586	6,789,872	3,232,576	96,865,832	88,460,626
Dangote Sugar Refinery Plc	<b>2011</b>			27,947,065	7,495,449	20,737,014		
	<b>2012</b>	16,331,679	83,051,450	14,030,303	7,681,681	21,418,034	106,868,054	85,756,863
	<b>2013</b>	20,099,517	87,112,182	11,097,891	7,651,599	15,477,683	102,467,361	75,497,463
	<b>2014</b>	17,472,841	97,287,804	14,047,767	7,522,278	22,243,366	94,103,677	72,639,075
	<b>2015</b>	18,144,955	106,671,333	14,035,388	6,335,642	14,531,762	100,092,221	77,257,074
	<b>2016</b>	20,759,524	175,593,979	45,648,975	8,700,614	52,938,508	167,409,161	141,924,887
	<b>2017</b>	54,882,983	196,064,664	44,779,483	7,715,495	33,015,666	198,120,639	145,469,283
	<b>2018</b>	38,455,530	178,523,711	31,499,654	7,535,807	30,414,713	146,549,176	104,589,978
DN Meyer Plc.	<b>2011</b>			213,660	24,539	434,313		
	<b>2012</b>	(25,844)	2,577,673	242,279	183,878	526,708	1,472,734	910,200
	<b>2013</b>	(22,028)	2,597,517	210,110	139,677	572,098	1,500,112	926,124
	<b>2014</b>	(33,893)	2,435,368	198,493	296,716	253,298	1,340,103	747,861
	<b>2015</b>	80,544	383,368	196,315	149,177	224,459	1,187,236	681,853
	<b>2016</b>	(211,038)	308,708	178,888	105,767	160,550	1,091,000	757,202
	<b>2017</b>	(264,704)	1,273,952	114,612	143,473	110,389	1,097,061	764,263
	<b>2018</b>	182,412	1,053,881	131,044	107,232	90,510	970,134	584,589
First	<b>2011</b>			2,869,857		410,619		

Aluminium (Nigeria) Plc					239,230		8,549,878	8,291,209
	<b>2012</b>	(1,064,990)	8,770,956	2,283,214	262,687	444,477	8,639,181	8,490,152
	<b>2013</b>	29,761	8,482,712	1,968,734	292,486	263,218	8,390,463	7,674,047
	<b>2014</b>	106,385	8,389,909	1,881,596	173,431	114,985	8,901,618	8,161,063
	<b>2015</b>	43,172	8,152,847	1,712,976	154,316	276,671	10,478,233	9,751,311
	<b>2016</b>	271,620	9,245,829	2,188,780	73,833	255,459	9,154,586	8,106,538
	<b>2017</b>	345,901	9,524,990	1,478,481	305,853	551,764	7,878,319	6,606,554
	<b>2018</b>	54,949	14,145,414	1,288,872	598,855	1,340,400	6,891,214	6,402,151
Flour Mills of Nigeria Plc	<b>2011</b>			29,370,884	6,713,991	6,907,743		
	<b>2012</b>	11,377,133	172,508,941	26,627,282	4,881,179	8,000,845	183,402,710	161,796,284
	<b>2013</b>	11,626,381	223,889,725	40,992,727	8,377,121	20,791,361	225,629,747	202,445,764
	<b>2014</b>	12,457,034	220,087,648	45,371,104	46,678,382	26,528,831	245,701,366	216,422,044
	<b>2015</b>	910,983	231,529,878	47,921,280	6,138,459	18,197,848	229,777,869	204,834,346
	<b>2016</b>	6,248,497	233,296,607	37,257,683	7,560,078	22,355,911	247,876,504	223,664,917
	<b>2017</b>	10,979,579	343,933,157	63,597,671	7,812,156	48,765,271	375,225,284	324,918,838
	<b>2018</b>	12,027,438	322,604,582	71,755,238	7,563,916	34,580,478	371,370,740	321,920,291
FTN Cocoa Processors Plc	<b>2011</b>			384,830	103,527	140,354		
	<b>2012</b>	(405,980)	4,389,402	384,830	103,527	140,354	278,170	531,572
	<b>2013</b>	(286,076)	4,553,277	576,148	217,876	336,963	491,898	587,081

	<b>2014</b>	(577,204)	4,421,423	483,719	76,302	200,761	247,418	508,827
	<b>2015</b>	(201,195)	4,738,510	474,791	472,741	241,030	1,368,462	1,427,795
	<b>2016</b>	(847,235)	5,276,690	306,313	199,173	297,948	855,393	913,601
	<b>2017</b>	(762,421)	4,815,357	326,210	54,353	192,366	81,824	332,786
	<b>2018</b>	(211,671)	4,813,698	381,679	42,679	200,945	241,353	395,465
Greif Nigeria Plc	<b>2011</b>			128,311	131,750	260,490		
	<b>2012</b>	61,011	631,567	133,553	125,757	247,062	748,664	613,557
	<b>2013</b>	52,469	682,415	160,241	105,353	248,360	795,200	652,811
	<b>2014</b>	58,029	663,773	115,120	128,704	11,208	787,582	649,681
	<b>2015</b>	40,149	715,714	112,595	84,976	2,071	805,370	656,027
	<b>2016</b>	37,597	722,490	126,965	165,675	23,721	999,150	832,998
	<b>2017</b>	77,554	786,663	182,126	137,339	14,410	1,405,218	1,149,882
	<b>2018</b>	(245,229)	475,731	63,874	69,432	5,351	534,611	649,287
Guinness Nigeria Plc	<b>2011</b>			17,381,132	11,032,758	12,461,032		
	<b>2012</b>	21,074,950	102,534,172	21,998,519	4,471,619	12,280,193	126,288,184	70,088,245
	<b>2013</b>	17,008,875	132,328,273	12,400,102	9,066,066	20,899,579	122,463,538	66,385,104
	<b>2014</b>	11,681,560	121,060,621	13,469,248	16,956,291	30,723,577	109,202,120	57,868,906
	<b>2015</b>	10,795,102	122,246,632	10,750,598	12,310,899	17,669,293	118,495,882	62,604,362
	<b>2016</b>	(2,347,241)	136,992,444	13,021,248	24,049,099	18,167,963	101,973,030	60,162,617

	<b>2017</b>	2,662,081	146,036,216	21,080,211	16,299,545	20,514,653	125,919,817	77,604,513
	<b>2018</b>	9,943,164	153,254,968	19,032,362	18,610,741	19,515,187	142,975,792	94,350,387
Honeywell Floor Mill Plc	<b>2011</b>			3,226,626	527,716	429,760		
	<b>2012</b>	3,561,415	49,020,984	4,400,603	419,879	527,716	32,949,173	28,154,428
	<b>2013</b>	3,814,599	55,437,478	10,009,275	1,079,325	975,676	45,709,382	37,788,322
	<b>2014</b>	4,237,432	63,830,439	11,287,037	1,195,081	1,213,716	55,084,305	44,626,674
	<b>2015</b>	1,434,828	67,943,444	12,546,468	1,108,763	775,338	49,057,511	41,553,977
	<b>2016</b>	(2,869,342)	76,046,576	5,586,084	744,251	1,847,807	50,883,780	46,522,386
	<b>2017</b>	5,469,833	113,151,715	4,515,525	834,854	1,240,177	53,277,891	40,515,269
	<b>2018</b>	4,872,291	124,835,013	7,844,965	957,259	979,769	71,476,319	55,423,670
Lafarge Africa Plc	<b>2011</b>			10,282,629	371,065	5,294,185		
	<b>2012</b>	21,164,003	152,414,784	12,880,397	280,678	6,721,466	87,091,634	54,944,153
	<b>2013</b>	27,443,083	159,866,917	11,645,619	1,234,463	6,782,714	97,174,505	58,855,766
	<b>2014</b>	32,352,996	343,627,558	15,224,740	1,614,151	20,142,471	105,848,657	61,862,716
	<b>2015</b>	30,198,773	381,272,953	15,742,902	1,928,773	24,421,977	114,558,245	70,196,509
	<b>2016</b>	19,888,762	537,598,212	22,564,828	1,848,128	20,097,488	87,198,416	64,326,776
	<b>2017</b>	(7,098,191)	616,169,940	39,057,831	3,631,951	19,777,538	177,170,362	124,130,812
	<b>2018</b>	(7,408,583)	577,692,296	28,921,467	2,070,277	15,027,354	187,043,475	123,009,569
Livestock	<b>2011</b>			796,676		311,856		

Feeds Plc					109,953			
	<b>2012</b>	216,203	2,072,320	1,275,225	67,655	299,195	5,433,057	4,848,116
	<b>2013</b>	282,798	3,670,604	2,321,762	69,348	124,807	6,113,864	5,424,095
	<b>2014</b>	402,151	5,752,787	4,644,342	101,559	960,932	7,914,488	6,924,689
	<b>2015</b>	300,115	4,569,513	3,354,028	123,471	418,239	8,963,293	8,071,641
	<b>2016</b>	223,990	7,357,533	6,084,983	84,857	479,616	11,067,161	10,094,190
	<b>2017</b>	(725,803)	5,260,126	3,802,991	77,092	96,547	10,188,513	9,718,756
	<b>2018</b>	(761,227)	3,944,419	2,634,003	164,745	539,315	7,834,018	7,857,206
McNichols Consolidated Plc	<b>2011</b>			44,067	18,418	11,787		
	<b>2012</b>	11,966	261,735	34,245	23,523	5,857	389,620	303,191
	<b>2013</b>	26,835	321,069	32,792	30,449	25,531	430,971	320,872
	<b>2014</b>	45,473	378,273	28,986	47,937	24,168	519,800	376,202
	<b>2015</b>	65,276	420,150	62,639	28,734	39,070	1,009,809	811,062
	<b>2016</b>	70,181	475,141	77,062	28,710	31,574	1,093,806	903,246
	<b>2017</b>	41,521	539,238	42,812	44,590	26,086	967,194	820,939
	<b>2018</b>	42,602	825,690	51,757	62,020	24,420	786,912	646,583
NASCON Allied Industries Plc	<b>2011</b>			845,258	1,037,163	258,222		
	<b>2012</b>	4036338	10,689,542	910,321	1,056,715	225,077	13,414,185	8,323,191
	<b>2013</b>			815,483		215,528		

		4,038,405	11,431,167		1,143,385		10,837,261	6,244,155
	<b>2014</b>	2,856,399	12,555,855	1,471,568	1,095,878	640,238	11,250,544	7,464,783
	<b>2015</b>	3,017,564	16,294,826	1,933,001	1,279,586	489,548	16,178,197	11,819,079
	<b>2016</b>	3,818,674	24,603,267	2,720,232	285,836	927,913	18,291,792	12,375,018
	<b>2017</b>	7,626,856	30,123,247	3,016,787	585,116	440,663	27,064,325	17,070,310
	<b>2018</b>	6,449,385	30,270,429	8,887,876	709,263	2,114,129	25,769,352	17,988,663
Nestle Nigeria Plc	<b>2011</b>			9,902,238	4,843,331	7,293,394		
	<b>2012</b>	25,050,172	88,963,218	8,784,909	7,885,202	9,327,832	116,707,394	66,538,762
	<b>2013</b>	26,047,590	108,207,480	9,853,893	11,575,247	11,823,705	133,084,076	76,298,147
	<b>2014</b>	24,445,978	106,062,067	10,956,010	16,818,900	13,207,427	143,328,982	83,925,957
	<b>2015</b>	29,322,477	119,215,053	10,813,960	14,603,711	9,240,551	151,271,526	83,925,957
	<b>2016</b>	21,548,408	169,585,932	20,637,750	7,328,483	10,638,818	181,910,977	106,583,385
	<b>2017</b>	46,828,682	146,804,128	23,910,303	13,449,878	14,209,270	244,151,411	143,280,260
	<b>2018</b>	59,750,846	162,334,422	23,124,020	18,897,443	27,086,058	266,274,621	152,354,445
Nigerian Breweries Plc	<b>2011</b>			19,190,871	4,821,531	40,687,567		
	<b>2012</b>	55,624,366	253,633,629	24,652,723	12,518,318	44,619,713	252,674,213	127,222,069
	<b>2013</b>	62,240,317	45,285,469	20,643,153	8,035,165	47,821,328	268,613,518	132,136,476
	<b>2014</b>	61,461,821	56,930,683	28,478,459	11,293,928	51,695,706	266,372,475	130,788,296
	<b>2015</b>	54,508,368	356,707,123	28,409,703	11,719,622	26,313,230	293,905,792	149,736,072
	<b>2016</b>			31,244,703		28,649,372		

		39,622,914	367,639,915		12,753,803		313,743,147	178,218,528
	<b>2017</b>	46,572,313	382,726,540	42,728,862	13,137,794	39,597,344	344,527,216	201,034,636
	<b>2018</b>	29,359,828	388,766,316	32,506,824	21,874,589	45,389,551	324,388,500	197,484,694
Okomu Oil Palm Company Plc	<b>2011</b>			1,159,882	103,518	161,964		
	<b>2012</b>	4,346,666	31,054,673	973,615	19,612	248,027	10,146,164	5,789,729
	<b>2013</b>	2,693,555	30,050,647	1,319,903	797	329,420	8,860,425	6,258,508
	<b>2014</b>	1,904,495	17,872,328	1,415,352	14,569	546,210	8,655,718	6,703,881
	<b>2015</b>	2,898,645	20,053,186	1,490,595	9,752	716,848	9,738,015	6,459,834
	<b>2016</b>	5,906,453	24,597,665	1,719,080	61,200	318,735	14,364,736	7,413,174
	<b>2017</b>	11,140,142	31,372,152	2,687,196	89,651	320,205	20,261,918	9,133,732
	<b>2018</b>	10,337,171	38,417,953	3,148,880	40,021	1,128,156	20,257,669	9,997,745
Portland Paints & Products Nig. Plc	<b>2011</b>			803,376	455,089	460,636		
	<b>2012</b>	(199,166)	2,386,022	818,528	482,202	815,037	2,865,581	1,684,498
	<b>2013</b>	73,464	2,073,222	687,853	433,917	301,877	2,721,020	1,462,748
	<b>2014</b>	194,297	2,277,558	756,541	493,550	210,034	2,798,165	1,492,342
	<b>2015</b>	(258,369)	1,899,281	616,287	560,140	157,031	2,168,480	1,270,822
	<b>2016</b>	7,502	1,754,321	717,429	535,173	210,137	1,971,170	1,160,316
	<b>2017</b>	123,868	2,035,902	900,430	433,811	227,150	2,316,289	1,620,269
	<b>2018</b>			728,047		217,446		

		307,533	2,251,468		447,789		2,829,262	1,753,972
Unilever Nigeria Plc	<b>2011</b>			7,706,348	2,815,111	4,823,550		
	<b>2012</b>	8185987	36,497,624	7,230,127	1,998,273	5,430,776	55,547,798	33,902,137
	<b>2013</b>	6,793,615	43,754,114	6,988,379	4,427,350	6,702,522	60,004,119	37,554,111
	<b>2014</b>	2,873,235	45,736,255	8,614,597	4,518,493	5,083,218	55,754,309	35,584,016
	<b>2015</b>	1,771,063	50,172,484	6,173,113	4,174,782	6,280,820	59,221,748	38,174,248
	<b>2016</b>	4,106,422	72,491,309	9,878,499	4,336,828	8,173,171	69,777,061	49,481,020
	<b>2017</b>	11,207,213	121,084,365	11,478,532	5,840,368	8,135,087	90,771,306	61,828,042
	<b>2018</b>	12,621,908	131,843,373	13,928,867	18,225,511	13,138,613	92,899,969	64,674,847
Vitafoam Nigeria Plc	<b>2011</b>			4,017,504	563,652	1,767,029		
	<b>2012</b>	857,894	10,116,222	4,453,130	674,980	1,761,120	14,126,527	9,374,072
	<b>2013</b>	614,162	9,376,225	3,491,592	812,417	1,327,575	15,592,358	10,676,540
	<b>2014</b>	926,312	11,032,131	3,719,059	1,410,930	2,231,127	15,519,856	10,547,522
	<b>2015</b>	489,456	11,734,739	3,033,468	2,277,034	2,504,119	3,776,399	2,628,879
	<b>2016</b>	522,757	13,098,732	3,254,293	1,366,075	740,432	12,189,558	8,214,891
	<b>2017</b>	290,280	12,974,483	3,933,630	1,092,473	1,241,592	17,695,820	12,606,017
	<b>2018</b>	619,233	15,156,727	4,539,794	859,798	1,133,025	17,612,291	12,786,289