

IMPACT OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY OF WHEAT FLOUR FACTORIES IN ADAMA CITY

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Declaration

The undersigned, declare that this thesis is my original work, has not been presented for degree in any other university and that all sources of materials used for the thesis have been dully acknowledged.

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Certification

This is to certify that W/Ro Berhane Shibru has carried out her research work on the topic under the title of “Impact of working capital management on profitability of Wheat flour factory: in case of Adama City” under my supervision. This work is original in nature and it is suitable for the award of degree of Masters of Science in Accounting and Finance.

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Table of Contents

Contents	pages
Acknowledgment	
Abstract	
List of acronyms	
Chapter One	1
Introduction.....	1
1.1 Background of the study	1-2
1.2 Statement of the problem	3.4
1.3 Objectives of the study.....	5
1.3.1 General Objective	5
1.3.2 Specific Objectives	5
1.4 Hypotheses of the Study.....	5-6
1.5 Significance of the Study	6
1.6 Scope of the study	7
1.7 Limitation of the study	7
1.8 Organization of the Paper.....	7
1.9 Conceptual Framework.....	8
Chapter Two.....	10
Related Literature Review	10
2.1 Theoretical review	10
2.1.1 Definition & concept of working capital	10
2.1.2 Management of working capital & its Impact.....	10
2.1.3 Working capital components & its management.....	13
2.1.3.1 Inventory management.....	13
2.1.3.2 Account receivable	13
2.1.3.3 Cash	13
2.1.3.4 Account payable.....	14
2.1.4 Working capital cycle	14
2.1.5 Factors determine working capital	15
2.1.5.1 Production policies	15

2.1.5.2 Nature of the business	15
2.1.5.3 Length of manufacturing process	16
2.1.5.4 Credit policy.....	16
2.1.5.5 Rapidity of turnover.....	16
2.1.5.6 Seasonal fluctuations.....	16
2.1.5.7 Price level change.....	16
2.1.6 Significance of adequate working capital.....	17
2.1.7 Disadvantages of inadequate working capital.....	18
2.1.8 Disadvantage of shortage of working capital.....	18
2.2 Review of related empirical literature.....	19
2.2.1 Empirical literature in global view.....	19
2.2.2 Empirical literature in the Ethiopian context	24
2.3 Research gap	25
Chapter Three.....	26
Research Design & Methodology	26
3.1. Research Design.....	26
3.2. Sample design & sample selection method.....	26
3.3. Data source & collection	27
3.4. Method of data analysis & Techniques	27
3.5. Model specification	28
3.6 . Testing of Hypotheses & variables & their measurement.....	29
3.6.1 Dependent variable (ROA).....	29
3.6.2 Independent variable	29
Chapter Four	33
4. Data Result and Discussion	33
4.1 Introduction	33
4.2 Document analysis	33
4.2.1. Descriptive statistics.....	33
4.2.3. Correlation analysis	36

4.2.4. Regression diagnosticsTest of CLRM asseptions	37
4.2.4.1. Test for Assumption of errors has zero mean.....	38
4.2.4.2 Test for Homoskedasticity	38
4.2.4.3 Test for Autocorrelation	39
4.2.4.4 Test for multicollinarity	40
4.2.4.5. Test of normality	41
4.2.4.6. Results of regression analysis	42
4.3 Analysis of data.....	45
Chapter Five.....	48
Conclusion and Recommendation	48
5.1 Conclusion.....	48
5.2 Recommendation.....	49
References.....	50
Appendix : Ratio data.....	52
Appendixes	
List of figures	
Fig. 4.1 Rejection, non –rejection and inconclusive region for DW test.....	39
Fig. 4.2 Normality test for residual.....	42
List of table's.	
Table 4.1 Descriptive Statistics of variables.....	34
Table 4.2 Correlation matrix of dependent and explanatory variables.....	36
Table 4.3 Autocorelation test: DW test.....	40
Table 4.4 Breusch-pagan F-test.....	38
Table 4.5 Correlation matrix among explanatory variables	41
Table 4.6 Regression result for determinants of wheat flour factory profitability.....	44

List of Acronyms

APP-Average Payment Period

AWF- Awofat Flour Factory

BOF- Bolo Flour Factory

CLRM- Classical linear Regression Model

CSA-Central Statistic Authority

DR-Debt Ratio

DW-Dublin Watson

GC-Gregorian Calendar

GDP-Gross domestic product

GT- Growth

ICR-Inventory Conversion Ratio

INFN- Food Inflation

LIQ- Liquidity

MAF- Mohammed Abu-Bakr Flour Factory

MOFED-Ministry of Finance and Economic Development

NOP-Net operating profit

OLS-Ordinary Least Square

RGGR- Real GDP Growth Rate

ROA-Return on Asset

SZ- Size

WF-Web Flour Factory

YERF- Yerer Flour Factory

YF- Yisalemush Tekle Flour Factory

Abstract

The aim of this paper was to examine the impact of working capital management on profitability of wheat flour factories in case of Adama city. The study employed explanatory research design to assess the impact of working capital management on profitability of selected wheat Flour Factories. Judgmental sampling method was used to select six sample wheat flour factories. Balanced panel data was analyzed by using descriptive statistics and correlation analysis. Fixed effect model in the form of multiple regression analysis was applied to analyze the annual data generated from the annual statements of the selected flour factories and annual reports of Ministry of Finance and Economic Development covering a period of 2007 to 2014 G.C. In this study ROA was used as the measure of profitability performance. The paper includes average payment period, debt ratio, liquidity, inventory conversion ratio and size of the firm as internal independent variables and food inflation rate and real GDP growth rate as external independent factors that determine the impact of working capital management on profitability of wheat flour manufacturing firms of Adama town. The study found that from the company specific variables size of the firm, Liquidity and inventory conversion ratio have positive significant impact on profitability performance of wheat flour manufacturing firms. Average payment period and debt ratio of the firm have negative impact on profitability performance. From macroeconomic variables food inflation rate has a positive significant impact on profitability. Whereas, real GDP growth rate has a positive impact on profitability performance of wheat flour manufacturing's in Adama town. The explanatory variables in the model are able to explain about 69% of the variation in the dependent variable ($R^2=0.69$) and the overall model is jointly significant (F-statistic). The study also conducted post estimation residual diagnostic tests and found that **the residuals are normally distributed, free from the problem of heteroskedasticity, autocorrelation and multicollinearity**. The researcher recommends that managers of selected wheat flour factories operating in Adama city should concentrate on impact of working capital management on profitabilities in general.

Keywords; Internal independent factors, External independent factors, wheat flour factories.

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CHAPTER ONE

INTRODUCTION

This chapter presents the overall introduction to the paper. The first section presents background of the study followed by statement of the problem, objective of the study, literature driven hypothesis, significant of the study, scope of the study , limitation of the study, conceptual frame work and finally the origination of the paper.

1.1 BACKGROUND OF THE STUDY

Working capital is needed for day-to-day operations of a firm and is described as an investment of the firm's capital in current assets and the use of current liabilities to fund part of the investment. (*Azam & haider,2011*).

Net working capital is defined as difference between current assets and current liabilities. In any operating cycle, working capital transforms from the form of cash to inventory, account receivable and then back to the form of cash (Thoa, et al, 2012)

Manufacturing is an important sector in the overall economic growth, manufacturing sector requires in depth analysis at industry as well as firm level ,Therefore Working capital management efficiency is vital especially for manufacturing firms, where a major part of assets is composed of current assets Horne and (Wachowitz, 2000). It directly affects the profitability and liquidity of firms (Raheman and Nasr, 2007). The profitability liquidity tradeoff is important because if working capital management is not given due considerations then the firms are likely to fail and face bankruptcy (Kargar and Bluementhal, 1994). The significance of working capital management efficiency is irrefutable (Filbeck and Krueger, 2005). Working capital is known as life giving force for any economic unit and its management is considered among the most important function of corporate management. Every organization whether, profit oriented or not, irrespective of size and nature of business, requires necessary amount of working capital. Working capital is the most crucial factor for maintaining liquidity, survival, solvency and profitability of business(Mukhopadhyay, 2004). Working capital management is one of the

most important areas while making the liquidity and profitability comparisons among firms (Eljelly, 2004). The greater the relative proportion of liquid assets, the lesser the risk of running out of cash, all other things being equal. All individual components of working capital including cash, marketable securities, account receivables and inventory management play a vital role in the performance of any firm and credit allocation.

Efficient management of working capital plays an important role of overall corporate strategy in order to create shareholder value. Working capital is regarded as the result of the time lag between the expenditure for the purchase of raw material and the collection for the sale of the finished goods. The way of managing working capital can have a significant impact on both the liquidity and profitability of wheat flour factories (Shin & Soenen, 1998).

If management of a firm does not constantly monitor and manage a business's liquidity- that is, its amount of working capital, the business can find itself in a difficult situation with its creditors (Padachi, 2006). As a result, most successful businesses keep the working capital ratio as low as possible and keep cash circulating, to maximize profit. Efficiency in working capital management is so vital for especially production firms whose assets are mostly composed of current assets as it directly affects liquidity and profitability of any firm.

The main purpose of the working capital management (WCM) is to make the sustainable level of the working capital (WC) which is favorable for the firm. For creating good worth of the share in front of shareholders, firms have to manage working capital efficiently and effectively (Hassan A, 2011 and Raheman and Nasr, 2007).

In general, working capital management is not only improving financial performance in today's cash-strapped and uncertain economy, but it is the question of meeting firm's day to day operation. Hence, it may have both negative and positive impact on firm's profitability, which in turn, has negative and positive impact on the shareholders' wealth (Muluaem,) and the same is also true on the researcher's result of hypothesis. Therefore, the main purpose of this study is to analyze and evaluate how the working capital management affects firms profitability of 6 selected wheat flour factories in Adama by evaluating the relationship between different variables.

1.2 STATEMENT OF THE PROBLEM

The main objective of any firm is to maximize profit and to satisfy Share holders and Stake holder's needs who have a great relation with the firms. But, the main challenge of the firm is the balancing problem between current asset and current liability and the lack of proper management of working capital. In order to achieve this objective specially the financial manager should set better strategy to manage the working capital and should minimized the cost in order to increase profit and balance each specific variables of working capital such as cash, inventory, receivables and payables.

Working capital management is very important element to analyze the organization performance while conducting day to day operation. However, it is also indicated that working capital management is a difficult task for a manager to make sure that the business function is running in well organized manufacturing and if there are chances of inequality between current assets and liabilities during business operation, firms growth and profitability will be affected. (Azam & haider,2011). Working capital management is vital especially for flour factories, where a major part of assets is composed of current assets (Horne and Wachowitz, 2000). It directly affects the profitability and liquidity of firms (Raheman and Nasr, 2007). The profitability liquidity tradeoff is important because if working capital management is not given due considerations then the firms are likely to fail and face bankruptcy (Kargar and Bluementhal, 1994). The significance of working capital management efficiency is irrefutable (Filbeck and Krueger, 2005). Working capital is known as life giving force for any economic unit and its management is considered among the most important function of corporate management. Every organization whether, profit oriented or not, irrespective of size and nature of business, requires necessary amount of working capital.

A shortage of working capital can cause problems on the firm's daily activities which will inversely affect to the firm's profitability while overinvestment on working capital can increase

opportunity cost, especially when the firm has to use external funds to finance its working capital.(Thoa et al., 2012).

If the firms focus only on profit by holding too few current asset, then it suffer the liquidity problem which leads to bankruptcy on the other hand if the firm bother only for liquidity holds to much current asset then the idle current asset increase the costs (that the firm can earn if the asset is invested at profitable investments, holding assets in case of inventory etc it may not increase profit, therefore financial manager should balance both problems.

The impact of working capital management on firm's profitability has been studied by different researchers in different parts of the world (Filipa, 2011; Muoki, 2012; Garcia, 2011; Deloof, 2003; Mathuva, 2011 and Kirawa, 2013). These studies are made on large firms operating within developed money and capital markets of developed countries. In Ethiopian context, researches that are conducted on impact of working capital management on firm's profitability, particularly for manufacturing companies concentrated on share companies, private limited companies, and small; medium scale enterprises and sole proprietorship manufacturing firms(Mulualem, 2011; Nuru, 2012; Ephrem 2011 and Abraham,2013).

However, there are inconsistencies between the findings of some researchers. For instance the study conducted by (Filipa 2011), (Deloof ,2003) and (Nuru 2011)found strong negative cause and effect relationship between average collection period, average payment period, inventory turnover period with firm's profitability. Other researchers like (Mathuva,2011) Kirawa,2013), (Abraham,2013) and(Muoki ,2013) found positive relationship with average collection period and average payment period. A study conducted by other researcher (Michael, 2012), found negative but not significant relationship between inventory turnover period and average payment period with profitability.

The Study wants to examine how the working capital management can affect profitability of Selected Wheat Flour Factory in Adama city. To the best of researcher knowledge no research has been conducted in this area of study particularly in Adama city and the current study is expected to fill the gap in research on this area in this sector of the economy.

1.3 OBJECTIVE OF THE STUDY

1.3.1 GENERAL OBJECTIVE OF THE STUDY:

The main objective of the study is empirical investigation on impact of working capital management on *profitability* of 6 selected Wheat flour Factory in Adama city.

1.3.2 SPECIFIC OBJECTIVES OF THE STUDY:

- To examine the relationship between food inflation rate and profitability.
- To establish the relationship between average payment period and profitability
- To find out the relationship between inventory conversion ratio and profitability
- To identify the relationship between current ratio and profitability
- To assess the relationship between debt ratio and profitability
- To examine the relationship between firms size and profitability
- To identify the relationship between real GDP growth rate and profitability

1.4 Hypotheses of the Study

In order to achieve the objective of the study, a number of hypotheses were tested regarding the determinants of profitability performance of wheat flour manufacturing firms in Adama city based on different empirical research and theoretical reviewed made. Therefore, the following

research hypotheses about the determinants of manufacturing companies' profitability are specified based on theories and past empirical studies related to wheat flour factories profitability. There are two general testable hypotheses with their sub hypothesis. These testable hypotheses could be formulated as follows:

Hypothesis 1: Firms internal specific determinants have significant effect on manufacturing profitability.

- **Hypothesis 1.1:** *There is a significant Negative relationship between the Average payment period and the firm's profitability.*
- **Hypothesis 1.2:** *There is a significant positive relationship between the size of the firm and the firm's profitability.*
- **Hypothesis 1.3:** *There is a significant Positive relationship between liquidity of a firm and the firm's profitability.*
- **Hypothesis 1.4:** *There is a significant positive relationship between the Inventory conversion ratio and the firm's profitability.*
- **Hypothesis 1.5:** *There is a significant negative relationship between the Debit ratio of firms and the firm's profitability.*

Hypotheses 2: Macroeconomic determinants have significant effect and relation on manufacturing firm's profitability.

- **Hypotheses 2.1:** *There is a significant negative relationship between real GDP growth rate and firm's profitability*
- **Hypotheses 2.2:** *There is a significant positive relationship between food inflation and firm's profitability*

1.5 SIGNIFICANCE OF THE STUDY

This study clearly investigate the impact of working capital on profitability of 6 selected Wheat Flour Factory in Adama city. The study will benefit & contribute to show the impact of working capital on profitability and assist in formulating strategies on the management of working capital, especially in the collection and payment of debts and also in inventory management. It is equally expect that the outcome of

the study will benefit the owners, stakeholders, managers in 6 selected Wheat flour Factory in Adama city and help in deciding strategy to be employed regarding working capital management in order to improve the profitability and the growth of the firm. Furthermore, the result of this study informs and gives initiation for other researchers to undertake further and detailed studies on the impact of working capital management on profitability.

1.6 THE SCOPE OF THE STUDY

This study was primarily focused on the impact of working capital on profitability of selected Wheat Flour Factories in Adama town. The sample size is only 6 Factories. The study used only secondary data. The research time which was used for this research is only eight years financial reports, from year 2007-2014 of selected wheat flour factories. The researcher have no farther going to the other wheat flour factories because the other wheat flour factories have no complete and well organized documents. The study contains one dependent and seven independent variables.

1.7. Limitation of the study

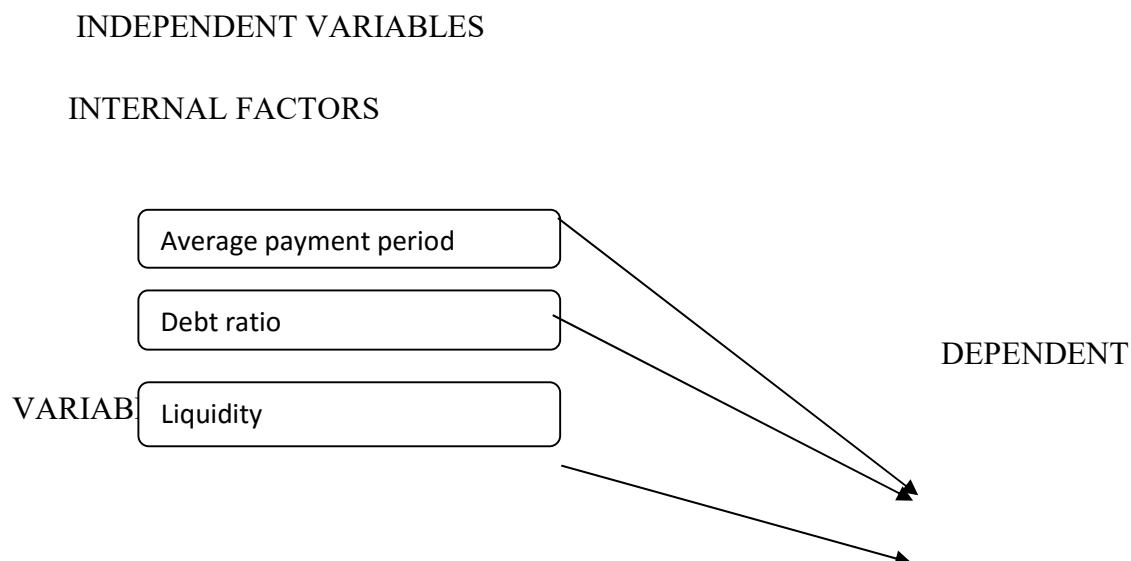
The study is limited to analyze components of working capital management, namely average payment period, inventory conversion ratio, current ratio, debt ratio, firm's size, inflation, RGGR and their effects on profitability of wheat flour factories .Lack of willingness of the organizations to give secondary data and this affects the output. And also the study excluded other variables; therefore the results may not generalize as a whole.

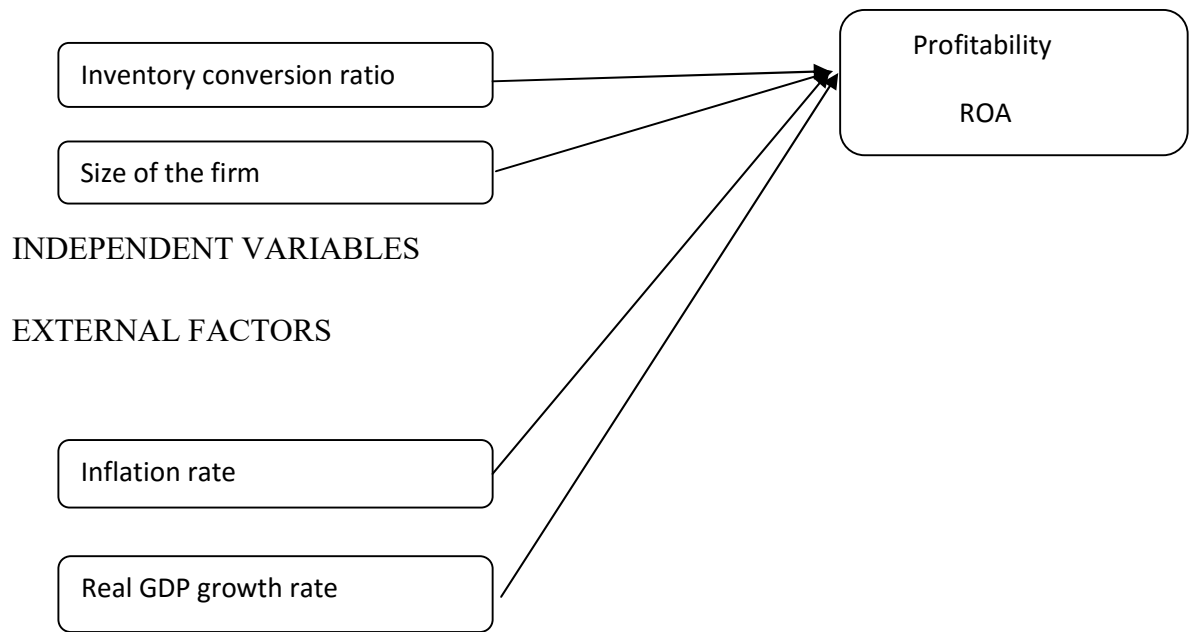
1.8 ORGANIZATION OF THE PAPER

The paper is organized into five chapters. The first chapter deals with background of the study, statement of the problem, research objectives, hypothesis, significance of the study, scope of the study, limitation of the study and organization of the research report. The second chapter is exclusively devoted to the review of related literature on impact of working capital management from global and Ethiopian perspectives. Chapter three indicates the methodology used in the study: the chapter comprises research design, sampling, data collection, data analyzing instruments and the description of applied regression model, Discussion and analysis of the findings of the study is described in chapter four. And the last chapter presents the conclusions drawn from the findings and recommendations.

1.9 Conceptual Framework

Figure 1 below presents schematic conceptual framework of the relationship between working capital management measures and profitability of firms.





CHAPTER TWO

LITERATURE REVIEW

This chapter presents the review of related literatures. The chapter is divided into three sections. The first section presents the theoretical review of literatures related topic of the study. The Second section discusses the empirical literatures studied by different researchers from globally and Ethiopia point of view that are related to the problem under study. The third section presents research gap.

2.1 Theoretical Reviews

2.1.1 Definition and Concept of Working Capital

working capital is defined as current assets and current liabilities. Working capital is the money needed for day-to-day operations of a firm and is described as an investment of the firm's capital in current assets and the use of current liabilities to fund part of the investment.

The concept of working capital management addresses companies' managing of their short-term capital and the goal of the management of working capital is to promote a satisfying liquidity, profitability and shareholders' value. Working capital management is the ability to control effectively and efficiently the current assets and current liabilities in a manner that provides the firm with maximum return on its assets and minimizes payments for its liabilities. (Danel Mogaca ,et al,2013).

2.1.2 Management of working capital and its impacts on profitability

Working capital management involves the financing and management of the current assets of the firm and they change in nature thus, possible hourly, as a result managerial decisions must be made with respect to how much inventory is to be carried and how to get the funds to pay for it. Efficient working capital management involves planning and controlling current assets and current liabilities in such a manner that eliminates the risk of inability to meet due short-term obligations and avoids excessive investment in these assets, (Eljelly,2004).Efficient management of working capital, and more recently good credit management precise as being pivotal to the health and performance of the small firm sector. A well designed and implemented working capital management policy is expected to contribute positively to the creation of a firm's

value. Current assets of many companies, accounts for over half the total assets and are even higher in the companies in the distribution sector. (Horne and Wachowicz, 2009). However, a company is required to maintain a balance between liquidity and profitability while conducting its day to day operation. This required that a business must be run both efficiently and profitably. In the process, Assets-liability miss-match may occur, which may increase the firm's profitability in the short - run but at a risk of its insolvency. On the other hand, too much focus on liquidity will be at the expense of profitability of the firm. Moreover, if management of a firm does not constantly monitor and manage a business's liquidity-that is, its amount of working capital, the business can find itself in a difficult situation with its creditors. (Padachi 2006). As a result, most successful businesses keep the working capital ratio as low as possible and keep cash circulating, to maximize profit. Efficiency in working capital management is so vital for especially production firms whose assets are mostly composed of current assets as it directly affects liquidity and profitability of any firm. (Horne and Wachowitz ,1998) and (Raheman and Nasr (2007).

Main objectives of net working management is to maintain normal daily operational activities for the firms in order to increase the firm's performance and to reduce the firm's liquidity risk.

A shortage of working capital can cause problems on the firm daily activities which will inversely affect to the firm's profitability while overinvestment on working capital can increase opportunity cost, especially when the firm has to use external funds to finance its working capital. (Thoa T.K. et al.2012)

For creating good worth of the share in front of shareholders, firms have to manage working capital efficiently and effectively (Hassan Aftab Qazi^{1*}, Syed Muhammad Amir Shah², Zaheer Abbas³ and Tanzeela Nadeem⁴ 2011).

Efficient management of working capital plays an important role of overall corporate strategy in order to create shareholder value. Working capital is regarded as the result of the time lag between the expenditure for the purchase of raw material and the collection for the sale of the finished goods. The way of managing working capital can have a significant impact on both the liquidity and profitability of the company (Shin & Soenen, 1998).

The impact of working capital management on firms profitability has been studied by different researchers in different part of the world however these studies are made on large firms operating with in developed money and capital markets but in Ethiopian context ,researchers that are conducted on impact of working capital management on firms profit, particularly for manufacturing company participating on share company, plc, small and medium scale enterprise, sole proprietorship manufacturing firms(mulualem 2011 Nuru,2012 &ephrem,2011, Abraham Kamfeso Kasahun,2012) An exploratory research design considers the most suitable approach in view of the nature of the problem being investigated. Exploratory research was conducted to clarity and research a better understanding of the nature of the problem. (Melaku Teklu , 2013)

2.1.3 WORKING CAPITAL COMPONENTS AND ITS MANAGEMENT

2.1.3.1 Inventory Management:

Inventory management is described as “the planning, coordinating and controlling activities related to the flow of inventory through and out of an organization, (Horngren, Datar and Foster.2013)”;. Inventory may be classified as Supplies, Raw materials, Work in progress and finished goods.” (Brigham and Houston ,2002),. These classes of inventory are essential part of virtually all business operations, as with the case of account receivables, inventory levels depends heavily on sales

2.1.3.2 Account receivables:

Account receivables “makes up a very large portion of the firm’s assets; they actually composed of 25.97 percent of a typical firm asset. (Martin, Petty, Keown and Scott, 1991). Because of their magnitude any changes in their levels will affect profitability.” An increase in account receivables that is additional extension of trade credits- not only result in higher sales , also requires additional financing to support the increased investment in account receivables . The cost of credit investigation and collection efforts and the chances of bad debts are increased. The authors further explained that all firms by their nature are either selling goods or providing services. These sales could also either take the form of cash sales or to a large extend credit sales. Whenever a credit sale is made, it increases the firms account receivables, therefore the credit account receivable management depends upon the degree to which the firm sells on credits. Cash flow from sales cannot be invested until the account is collected, control of account receivables takes on additional importance and efficient collection determines both profitability and liquidity of the firm.

The type of customer and credit policy also affects the level of investment in account receivables. For receivables, managing our decision is not to minimize loses, but to maximize profits.

2.1.3.3 Cash :

Cash management is described as minimizing the firm’s risk of insolvency. They further argued that firms are unable to meet their maturing liabilities on time and that the reason for these firms

lacking the necessary liquidity to make prompt payment on its current obligation is due to large cash caring.

Cash can make production halt should payment for raw materials purchased be continually late or omitted entirely resulting to low production leading to low profit margin Sound working capital is designed to minimize the time between cash expenditure on material and collection of cash sales. Of time between where the company makes payment and when it receives cash inflows, it also equals the length of time between the firm's actual cash expenditure and its own cash receipts.

Collection Period is the average length of time required to convert the firm's credit sales per day and Payable Deferral Period is also the average length of time between the purchase of material and labour and the payment for cash for them." (Martin, Petty, Keown and Scott, 1991).

2.1.3.4 Account payables:

Firms generally make purchases from other firms on credits, recording the debts as account payables. It is the largest single category of short term debt because small firms do not qualify from financing from other sources , they rely heavily especially on trade credits as a result firms that do sell on credit have a credit policy that includes terms of credits.

Account payables can further be looked into as trade account payables and other accounts payables. Trade accounts payables are short term obligations to suppliers for purchases of merchandise and other accounts payable includes liabilities for any goods and services other than merchandise. (Block, Hirk and Short,2000).

2.1.4 Working Capital Cycle

Cash flows in a cycle into, around and out of a business. It is the business life blood and every manager's primary task is to help keep it flowing and to use the cash flow to generate profits. If a business is operating profitably, then it should, in theory, generate cash surpluses. If it doesn't generate surpluses, the business will eventually run out of cash and expire. The faster a business expands the more cash it will need for working capital and investment.

The cheapest and best sources of cash exist as working capital right within business. Good management of working capital will generate cash will help improve profits and reduce risks. Bear in mind that the cost of providing credit to customers and holding stocks can represent a substantial proportion of a firm's total profits. There are two elements in the business cycle that absorb cash –

- **Inventory** (stocks and work-in-progress)
- **Receivables** (debtors owing you money).

The main sources of cash are **Payables** (your creditors) and **Equity and Loans**. Each component of working capital (namely inventory, receivables and payables) has two dimensions TIME and MONEY. When it comes to managing working capital - **TIME IS MONEY**. If you can get money to move faster around the cycle (e.g. collect money due from debtors more quickly) or reduce the amount of money tied up (e.g. reduce inventory levels relative to sales), the business will generate more cash or it will need to borrow less money to fund working capital. As a consequence, you could reduce the cost of bank interest or you'll have additional free money available to support additional sales growth or investment. Similarly, if you can negotiate improved terms with suppliers e.g. get longer credit or an increased credit limit; you effectively create free finance to help fund future sales.

. Collect receivables (debtors) faster You release cash from the cycle

- Collect receivables (debtors) slower Your receivables soak up cash
- Get better credit (in terms of duration or amount) from suppliers You increase your cash resources
- Shift inventory (stocks) faster You free up cash
- Move inventory (stocks) slower You consume more cash

It can be tempting to pay cash, if available, for fixed assets e.g. computers, plant, vehicles etc. If you do pay cash, remember that this is no longer available for working capital. Therefore, if cash is tight, consider other ways of financing capital investment loans, equity, leasing etc. Similarly, if you pay dividends or increase drawings, these are cash outflows and, like water flowing down a plug hole, they remove liquidity from the business.

2.1.5 Factors determining impact of working capital on profitability

2.1.5.1 Production policies:

The production policies pursued by the management have a significant effect on the requirement of working capital of the business. The decision about the management regarding automation, etc. will also have its effect on working capital. On case of labor intensive industries the working capital requirements will be more. While in the case of highly automatic plant the requirement of long term funds will be more. (Jani, et al.Virendra C., 2007)

2.1.5.2 Nature of the business:

Working capital also depends upon the nature of the business. Public utility concerns like railway, electricity etc. have a very little need of working capital since most of their transaction are on cash basis. On the other hand ordinary manufacturing and trading concerns require sufficient working capital, since they have to invest substantially in inventories and debtors. (Jani, et al.Virendra C., 2007)

2.1.5.3 Length of manufacturing process:

Longer the manufacturing process the higher will be the requirement of working capital and vice versa. (Jani, et al.Virendra C., 2007)

2.1.5.4 Credit policy:

A company which allows liberal credit to its customers may have higher sales but will need more working capital. A concern that purchases its requirements on credit and sells its products/services on cash requires less amount of working capital. (Jani, et al.Virendra C., 2007)

2.1.5.5 Rapidity of turnover:

A company having high rate of turnover will need lower amount of working capital as compared to a company which has a lower turnover. (Jani, et al.Virendra C., 2007)

2.1.5.6 Seasonal fluctuations:

In case of seasonal industries like sugar and woolen textiles, their working capital required during the particular season will be higher than other periods. (Jani, et al.Virendra C., 2007)

2.1.5.7 Price level changes:

Changes in the price level also affect the working capital requirements. Generally, the rising prices will require the firm to maintain larger amount of working capital as more funds will be required to maintain the same current assets. The effect of rising prices may be different for different firms. Some firms may be affected much while some others may not be affected at all by the rise in prices.

For a manufacturing organization, the following factors have to be taken into

consideration while making an estimate of working capital requirements:

Factors to be considered while estimating working capital.

- (1) Total cost of material, wages & overheads.
- (2) The length of raw material cycle.
- (3) The length of production cycle.
- (4) The length of sales turnover period.
- (5) The average period of credit allowed to customers.]
- (6) The amount of cash need to pay day to day transactions.
- (7) The average amount of cash need to make advance payments, if any

(8) The average credit period expected to be allowed by suppliers.

(9) Time – lag in the payment of wages and other expenses.

From the total amount blocked in current assets estimated on the basis of the first seven items given above, the total of current liabilities i.e. the last two items is deducted to find out the need of working capital. (Jani, et al.Virendra C., 2007)

2.1.6 Significance of Adequate Working Capital

Circulations of blood are essential in the human body for maintaining life similarly working capital is the lifeblood of a business. It is very essential to maintain the smooth running of a business. Even a fully equipped manufacturing firm is sure to collapse without an adequate supply of raw material to process, cash to meet the wage bill, the capacity to wait for the market for its finished product and the ability to grant credit to its customers. The main advantages of maintaining adequate amount of working capital are as follows :

- Solvency of Business: Solvency of the business can be maintained by regular and constant production process. An adequate working capital makes it possible.
- Regular Supply of Raw Material: Sufficient working capital provide uninterrupted flow of production by regular supply of raw material continuous production.
- Regular payment of day - to – day commitments: Regular payments of salaries,wages and other day-to-day commitments which raises the moral of its employers, increases their

efficiency, reduces wastages and costs and enhances production and profits and result of ample working capital.

- **Exploitation of Favorable Market Conditions:** Favorable market conditions such as purchase in bulk when the prices are lower and by holding its inventories for higher prices is possible only if adequate working capital is available.
- **Goodwill:** Sufficient working capital enables firm to make prompt payment and it increases the firm's credit or say goodwill.
- **Easy Loans:** Solvency and good credit standing of the firm enables it to get easy debt money on favorable terms.
- **Ability to face crisis:** Adequate working capital enables the firm to maintain its prompt position in critical situation.
- **Quick and Regular Return on Investment:** Quick and regular return on investments receives the confidence of its investors and creates favorable market to raise additional funds in future. It is possible only by sufficient working capital.
- **High Morale:** Adequacy of working capital creates an environment of security, confidence, high morale and creates overall efficiency in a business. (L.N.Chopde, et al.1997)

2.1.7 Disadvantages of inadequate Working Capital:

Deficiency or excess of nutrients causes diseases. Inadequate working capital is dangerous sign for the existence of the firm. It should have neither redundant nor short working capital. Both positions are bad for the firm. However, from the point of firms' view, the inadequacy of working capital is more dangerous. **Disadvantages of Excessive Working Capital**

- Excessive working capital means motionless funds which can not result in profit or in earning on investments.
- Redundant working capital may drag to unnecessary purchase and accumulation of inventories.
- Redundant working capital may create wrong impression and in defective credit policy which may cause higher incidence of bad debts.
- Overall inefficiency in the organization may be the only outcome.
- The excessive working capital may draw to speculative transactions.
- Due to low rate of return on investments, the value of shares may also fall.

(Vivek S. Kajarekar,2007)

2.1.8 Disadvantages of Shortage of Working Capital

- Irregularity or late payment in short term liabilities results in lose of reputation and also makes firm unable to get good credit facilities.
- Regular supply of material can not be maintained due to inadequate working capital. This affects the whole production cycle.
- It can not buy its requirements in bulk and can not avail of discounts.
- It can not undertake profitable projects due to lack of working capital.
- It becomes difficult to pay day to day expenses of firm's operations and it creates inefficiency, increases cost and reduces the profits of the business.
- **The** rate of return on investments also falls with the shortage of working capital. (Ashok Dhinreja,et al.1997)

2.2. REVIEW OF RELATED EMPIRICAL LITERATURE

2.2.1. Empirical literature in global view

Many researchers in different countries have made investigation on the area of working capital management and firm profitability, especially in the manufacturing and construction sectors. For example, (Mathuva ,2010) focused on the influence of working capital management on corporate profitability of firms listed at the Nairobi Securities Exchange. (Gakure,et al. 2012) on the other hand, analyzed the relationship between working capital management and performance of 15 manufacturing firms listed at the Nairobi Securities Exchange for a period of five years from 2006 to 2010. (Omesa, et al.2013) examined the relationships between Working Capital Management and Corporate Performance of 20 manufacturing firms listed on the Nairobi securities exchange for 5 years from 2007-2011 was selected. Finally(Nyabwanga,et al,2012) assessed the effect of working capital management practices on the financial performance of SSEs in Kisii South Distric .

(Daniel Mogaka, et 2013) analyzes the effect of working capital management on firm's profitability in Kenya for the period 2003 to 2012. For this purpose, They are used balanced

panel data of five manufacturing and construction firms each which are listed on the Nairobi Securities Exchange (NSE) and also used Pearson's correlation and Ordinary Least Squares regression models were used to establish the relationship between working capital management and firm's profitability. The study finds a negative relationship between profitability and number of day's accounts receivable and cash conversion cycle, but a positive relationship between profitability and number of days of inventory and number of day's payable. Moreover, the financial leverage, sales growth, current ratio and firm size also have significant effects on the firm's profitability. Based on the key findings from this study it has been concluded that the management of a firm can create value for their shareholders by reducing the number of day's accounts receivable. The management can also create value for their shareholders by increasing their inventories to a reasonable level. Firms can also take long to pay their creditors in as far as they do not strain their relationships with these creditors. Firms are capable of gaining sustainable competitive advantage by means of effective and efficient utilization of the resources of the organization through a careful reduction of the cash conversion cycle to its minimum. In so doing, the profitability of the firms is expected to increase.

(Gul, et al. 2013) investigated the influence of working capital management (WCM) on performance of small medium enterprises (SMEs) in Pakistan. The duration of the study was seven years from 2006 to 2012. The data used in this study was taken from SMEDA, Karachi Stock Exchange, tax offices, company itself and Bloom burgee business week. The dependent variable of the study was Return on Assets (ROA) which was used as a proxy for profitability. Independent variables were Number of Days Account Receivable (ACP), Number of Day's Inventory (INV), Cash Conversion Cycle (CCC) and Number of Days Account Payable (APP). In addition to these variables some other variables were used which included Firm Size (SIZE), Debit Ratio (DR) and Growth (GROWTH). Regression analysis was used to determine the relationship between WCM and performance of SMEs in Pakistan. Results suggested that APP, GROWTH and SIZE have positive association with Profitability whereas ACP, INV, CCC and DR have inverse relation with profitability.

(Oladipupo and Okafor 2013) examined the implications of a firm's working capital management practice on its profitability and dividend payout ratio. The study focused on the extent of the effects of working capital management on the Profitability and Dividend Payout Ratio. Financial data were obtained from 12 manufacturing companies quoted on the Nigeria

Stock Exchange over 5 years period (2002 to 2006). Using both the Pearson product moment correlation technique and ordinary least square (OLS) regression technique, they observed that shorter net trade cycle and debt ratio promote high corporate profitability. While the level of leverage has negative significant impact on corporate profitability, the impacts of working capital management on corporate profitability appeared to be statistically insignificant at 5% confidence level. 4 International Journal of Accounting and Taxation, Vol. 1 No. 1, December 2013 ©American Research Institute for Policy Development www.aripd.org/ijat On the other hand, they observed that dividend payout ratio was influenced positively by profitability and net trade cycle but negatively by growth rate in earnings.

(Almazari, 2013) investigated the relationship between the working capital management (WCM) and the firms' profitability for the Saudi cement manufacturing companies. The sample included 8 Saudi cement manufacturing companies listed in the Saudi Stock Exchange for the period of 5 years from 2008-2012. Pearson Bivariate correlation and regression analysis were used. The study results showed that Saudi cement industry's current ratio was the most important liquidity measure which effected profitability, therefore, the cement firms must set a trade-off between these two objectives so that, neither the liquidity nor profitability suffers. It was also found, as the size of a firm increases, profitability increased. Besides, when the debt financing increased, profitability declined. Linear regression tests confirmed a high degree of association between the working capital management and profitability. (Rehman, et al.,2013)

(Akoto,et al.2013) analyzed the relationship between working capital management practices and profitability of listed manufacturing firms in Ghana. The study used data collected from annual reports of all the 13 listed manufacturing firms in Ghana covering the period from 2005-2009. Using panel data methodology and regression analysis, the study found a significant negative relationship between Profitability and Accounts Receivable Days. However, the firms' Cash Conversion Cycle, Current Asset Ratio, Size, and Current Asset Turnover significantly positively influence profitability. The study suggests that managers can create value for their shareholders by creating incentives to reduce their accounts receivable to 30 days. It is further recommended that, enactments of local laws that protect indigenous firms and restrict the activities of importers are eminent to promote increase demand for locally manufactured goods both in the short and long runs in Ghana.

(Omesa,et al. Maniagi, 2013) examined the relationships between Working

Capital Management and Corporate Performance of manufacturing firms listed on the Nairobi securities exchange. A sample of 20 companies whose data for 5 years from 2007-2011 was selected. For analysis Principal components analysis (PCA) is used due to its simplicity and its capacity of extracting relevant information from confusing data sets. From the results using PAC and multiple regression, working capital proxies Cash Conversion Cycle (CCC), Average Collection Period (ACP) and control variables Current Liabilities (CLTA), Net Working Capital Turnover Ratio (NSCA) and Fixed Financial Ratio (FATA) were significant at 95% confidence (p values are < 0.05) to performance as measured by Return on Equity (ROE). Further, ACP was found to be negatively related to ROE while CCC, CLATA, NSCA and FATA.

(Maradi, et al. 2012) compared working capital management of two groups of listed companies in Tehran Stock Exchange (TSE), which comprised of chemical industry and medicine industry. In chemical industry, 34 companies and medicine industry, 30 companies were selected and information related to these companies was gathered over 10 years (2001-2010) and analyzed using OLS multiple regression. The results show that, in medicine industry compared to chemical industry, debt ratio makes more impact on reduction of net liquidity. But examination of impact of LEV over WCR indicate that, in chemical industry, debt ratio makes more impact on reduction of working capital requirements, compared to medicine industry.

(Nyabwanga, et al, 2012) assessed the effect of working capital management practices on the financial performance of SSEs in Kisii South District. A sample of 113 SSEs comprising 72 trading and 41 manufacturing enterprises was used. Pearson's correlation coefficients and multiple regression analysis techniques were used to analyze data. Consequently, the findings of the study were that, working capital management practices were low amongst SSEs as majority had not adopted formal working capital management routines and their financial performance was on a low average. International Journal of Accounting and Taxation, Vol. 1 No. 1, December 2013 5 ©American Research Institute for Policy Development www.aripd.org/ijat The study also revealed that SSE financial performance was positively related to efficiency of cash management (ECM), efficiency of receivables management (ERM) and efficiency of inventory management (EIM).

Gakure, Cheluget, Onyango and Keraro (2012) analyzed the relationship between working capital management and performance of 15 manufacturing firms listed at the Nairobi NSE from

2006 to 2010 and for a total 75 firms year observations. They used secondary data from a sample of 18 companies at the NSE. A regression model was used to establish the relationship between the dependent variable and the independent variables. Pearson's correlation and regression analysis were used for the analysis. The results indicated that there is a strong negative relationship between firm's performance and liquidity of the firm. The study found that there is a negative coefficient relationship between accounts collection period, average payment period, inventory holding period and profitability while the cash conversion cycle was found to be positively correlated with profitability. However, the effects of the independent variables except the average payment period were no statistically significant though the overall model was statistically significant.

Sharma and Kumar (2011) examined the effect of working capital on profitability of Indian firms. They collected data about a sample of 263 non-financial BSE 500 firms listed at the Bombay Stock (BSE) from 2000 to 2008 and evaluated the data using OLS multiple regression. The results revealed that working capital management and profitability is positively correlated in Indian companies. The study further reveals that inventory of number of days and numbers of day's accounts payable are negatively correlated with a firm's profitability, whereas number of days accounts receivables and cash conversion period exhibit a positive relationship with corporate profitability.

(Raheman, et al. 2010) analyzed the impact of working capital management on firm's performance in Pakistan for the period 1998 to 2007. For this purpose, balanced panel data of 204 manufacturing firms was used which are listed on Karachi Stock Exchange. The results indicate that the cash conversion cycle, net trade cycle and inventory turnover in days are significantly affecting the performance of the firms. They concluded that manufacturing firms were in general facing problems with their collection and payment policies. Moreover, financial leverage, sales growth and firm size also had significant effect on the firm's profitability. They study recommended that effective policies must be formulated for the individual components of working capital.

(Mathuva, 2010) in his study on the influence of working capital management on corporate profitability found that there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers and profitability. He explained that the more profitable firms take the shortest time to collect cash from the customers. The study further

revealed that there exist a highly significant positive relationship between the inventory conversion period and profitability. It was explained that firms, which maintain sufficiently high inventory levels reduce costs of possible interruptions in the production process and loss of business due to scarcity and products. Finally, the study established that there exists a highly significant positive relationship between the average payment period and profitability. He held that the longer a firm takes to pay its creditors, the more profitable it is. In this study, a sample of 30 firms listed on Nairobi Stock Exchange for the periods 1993 to 2008 was used. Both the ported OLS and the fixed effects regression models were used.

(Gill, et al. 2010) analyzed the relationship between working capital management and profitability of 88 American firms listed on New York Stock Exchange for a period of 3 years from 2005 to 2007 was selected. The data was analyzed using Pearson Bivariate Correlation Analysis and Weighted Least Squares (WLS) Regression techniques. They found statistically significant relationship between the cash conversion cycle and profitability, measured through gross operating profit. It followed that managers can create profits for their companies by handling correctly the cash conversion cycle and by keeping accounts receivables at an optimal level.

6 International Journal of Accounting and Taxation, Vol. 1 No. 1, December 2013 ©American Research Institute for Policy Development www.aripd.org/ijat Although studies on working capital management have been carried out by various scholars such as Gul, et al. 2013); (Oladipupo,et al. 2013); (Ahmad ,2013); (Akoto, et al. 2013); (Omesa, et al. 2013); (Maradi,et al. 2012); (Gakure,et al. 2012); (Sharma,et al.2011); (Mathuva, 2010); and (Gill,et al. 2010), it is instructive to note that there is still ambiguity regarding the appropriate variables that might serve as proxies for working capital management.

2.2.2 Empirical Literature in the Ethiopian Context

In Ethiopia few researchers conducted studies on the impacts of working capital management on profitability. Among them:

(Ephrem, 2011) evaluated the impact of working capital on the performance of S.M.E.S of nifasslik & Sub cities in Addis Ababa .In doing so he used both primary and secondary data from 30 & medium enterprises ,and he analized the data by using descriptive statistics and quantitative

med.(correlation and regression).The finding of the paper suggested that w.c is negatively affect by the time period required by the enterprise to receive their debts, pay their bills & collect cash. Besides that the financial leverage, size and current ratio of those small and micro enterprise under study have impact on the availability of adequate working capital.

(Mulalem,2011) attempted to examine the impact of working capital management on firms profitability in manufacturing share company in Addis Ababa city. He used survey of document analysis of companies audited financial statement and analyzed the data on quantitative basis using persons correlation and ols regression analysis .The results showed that there is statistical significance negative relationship between profit & working capital management. It means that, company management can create profit or value for their company & share holder by handling correctly the cash conversion cycle and keeping each difference company of a possible optimum level.

The study of(Bamlaku, 2012) reveled that appropriate amount of working capital has measured efficient performance of firms and adequate working capital inefficient firms liability to pay its short term obligation and its signed inefficient performance of the manufacturing enterprise in Addis Ababa. His study was quantitative approach of research that has been conducted by statically analysis of firms information specifically annual financial statement of selected Addis Ababa manufacturing firms for the period of 2006-2010.

The Study of (Abraham Kenefso,2013) attempted to examine the impact of working capital management on sole proprietorship of 10 selected manufacturing firms in Adama city. The data was analyzed by descriptive statistics and balanced F. efficient panel regression model. The data used in the study was obtained from financial statement of respected firms for the period 2007-2012.He recommended that the positive relation between average payment period and net operating profit shows that as an adequate .Therefore firm should adopt payment policy that slowdown their payment, the firm can increase profit by shorting average conversion period as the negative relation between the two suggests and the firm should accelerate their recivables by implementing collection policy and also the firm should select target market rather than simply increasing sales.

2.3 Research gap

As to the knowledge of researcher in relation with this topic area, i.e. impact of working capital on profitability of wheat flour manufacturing in Adama town, there is no prior studies prepared in Adama city. But the researcher investigated that various studies that was conducted in Ethiopia which are indirectly related with the proposed study.

In the context of Ethiopia, the related study conducted by (Mulalem,2011) ,(Ephrem, 2011) (Bamlaku ,2012) attempted to examine the impact of w.c management on firms profitability and Abraham (Kenefso,2013) attempted to examine the impact of w.c management on sole proprietorship of 10 selected manufacturing firms in Adama city, even if they try to identify the impact of some firm-specific variables.

However, there are inconsistencies between the findings of some researchers. For instance the study conducted by(Filipa ,2011), (Deloof,2003) and (Nuru, 2011)found strong negative cause and effect relationship between average collection period, average payment period, inventory turnover period with firm's profitability. Other researchers like (Mathuva,2011), (Kirawa,2013), (Abraham,2013) and (Muoki ,2013) found positive relationship with average collection period and average payment period. A study conducted by other researcher (Michael, 2012), found negative but not significant relationship between inventory turnover period and average payment period with profitability.

In general, The Study wants to examine how the working capital management can affect profitability of Selected Wheat Flour Factory in Adama town. The current study is expected to fill the gap in research on this area in this sector of the economy by adopting quantitative research method.

CHAPTER THREE

RESEARCH DESIGN & METHODOLOGY

3. RESEARCH DESIGN AND METHODOLOGY

3.1 RESEARCH DESIGN

The researcher investigated the effect of working capital management on firm's profitability using a panel data regression analysis. The source of data for the study is the annual financial statements of 6 selected wheat flour factories in Adama from the period 2007 to 2014. From these financial statements variables such as net operation profit (NOP), Account payables days (AP days), Inventory conversion ratio, Debt ratio, Liquidity information and size of the firm would have been generated.

The researcher used explanatory research design to describe the impact of working capital on profitability of 6 selected wheat Flour Factories in Adama town. The explanatory research design considers the most suitable approach in view of the nature of the problem being investigated. Explanatory research conducts to clarify and research a better understanding of the nature of the problem. The researcher used quantitative method of research to test a research hypothesis.

3.2 SAMPLE DESIGN AND SAMPLE SELECTION METHOD

As the sample of the companies to be included in the study are needed to be more than 8 years of operations, the paper is based on Judgmental sampling approach, and use 6 companies in the study. Hence the paper based on eight years financial statements collected from 6 companies and the selection of sample size is based on the operational age of the firms, therefore these samples fairly represent the population as a whole.

3.3 DATA SOURCE AND COLLECTION

To conduct this research, the researcher used secondary data and the analyses is basically concentrated on the data available in financial statements of firms for the purpose of analyzing internal factors, central statistic authority (CSA) and Ministry of Industry for the analysis of external factors like real GDP Growth rate and food inflation covering the period of 2007-2014. The secondary data have been collected from 8 years financial reports of each 6 selected wheat Flour Factories in Adama town.

3.4 METHOD OF DATA ANALYSIS & TECHNIQUES

Analysis of data involves the number of closely related operations that are performed with the purpose of summarizing the collected secondary data and organizing these in such a manner that they yield answer to the research questions or suggest hypothesis or questions, For this the researcher used multiple regression analysis and descriptive (Statistical) analysis . Eviews 6 software package was used for further analysis. The collected data was regressed by panel data fixed effect regression method and interpret with the help of statistical description including standard deviation, average, minimum, maximum and median (descriptive statistics) and multiple regression (significant test). As noted in Baltagi (2005) the advantage of using panel data is that it controls for individual heterogeneity, less co-linearity among variables and tracks trends in the data something which simple time-series and cross-sectional data cannot provide.

A multiple linear regression model and t-static was used to determine the relative importance of each independent variable determine profitability. The multiple linear regressions model was run, and thus OLS was conducted using EVIEWS 6 econometric software package, to test the casual relationship between the firm's profitability and their potential determinants and to determine the most significant and influential explanatory variables determine the profitability of wheat flour manufacturing firms. The rational for choosing OLS is as noted in Petra (2007) OLS out performs the other estimators when the following holds; the cross section is small and the time dimension is short. Therefore, as far as both the above facts hold true in this study it is rational to use OLS.

In order to calculate the value of the firm-specific determinants the researcher was used financial ratio analysis by taking the value of each firm specific variables from the financial reports of each firm and compute the ratio analysis. Regarding the macroeconomic determinants for each period the researcher was directly use which get from the source.

3.5 Model Specification:

Since the study seeks to investigate the effect of working capital management on firms profitability in selected Wheat Flour Factories in Adama town over 8 years period, the study used panel data regression analysis of cross-sectional and time series data. This is consistent with (Raheman & Nasr,2007) The general model for the study is:

- $ROA_{it} = \beta_0 + \sum \beta_i X_{it} + \varepsilon_{it}$

- (Eq. 1) ROA_{it} : Return on asset of firm i at time t β_0

- The intercept of equation β_i : Coefficients of X_{it} variables X_{it}

- The different independent variables for working capital management of firm i at time ti : Manufacturing firms= 1,2,3,4,5,6

- Firms t : Time= 1,2,3,4,5,6,7,8 years

- ε : The error term Actually, when the researcher convert the above general least

squares model into specified variables it becomes: $ROA_{it} = \beta_0 + \beta_1 A_{pdaysit} +$

$\beta_2 \ln crato_{it} + \beta_3 D3R_{it} + \beta_4 LIQ_{it} + \beta_5 RGGR_{it} + \beta_6 SZ_{it} +$

$\beta_7 INF_{it} + \varepsilon_{it}$

. They are parameters The researcher used log-linear model to establish the relationship between the dependent and independent variables.

3.6. Hypotheses and their measurement

In the context of the problems highlighted the broad objective of this research is to examine the impact of working capital on profitability of 6 selected wheat flour factory in Adama town. In line with the broad purpose statement, Seven hypotheses were formulated for examination purpose. Hence, subsection 3.6.1 presents the dependent variable as proxy for wheat flour manufacturing firms. Then the independent variables that are selected and categorized into firm-specific impact of working capital on profitability are presented in subsection 3.6.2.

3.6.1. Dependent Variable (ROA)

Recent literature analyzes the profitability of companies from various countries and economy sectors through indicators like net operating profitability (NOP) (Raheman et al., 2010), (Dong and Su., 2010), return on total assets (ROTA) (Deloof, 2003), (Padachi, 2006), return on invested capital (ROIC), return on assets (ROA) (Narware, 2010). In these cases, the elements considered by profitability analysis as independent variables are financial indicators that express the working capital. For the evaluation of profitability, Return on total assets (ROA) was used as a dependent variable. It is considered that it includes all the influences of the assets' management and it is acknowledged as a key indicator of increasing company performance; it also defines their economic growth potential (Helfert, 2002).

The Return on Assets (ROA) indicator expresses the company's ability to generate profit as a consequence of the productive use of resources and of the efficient management, and it's used as a dependent variable in the assessment of economic performance. It is computed as a ratio between Net Income and Total Assets (Burja, 2010).

3.6.2. Independent Variables

This subsection describes the independent variables that are used in the econometric model to estimate the dependent variable. Following prior researches towards the impact of working

capital on profitability, the independent variables are classified into firm-specific and macroeconomic variables.

Internal factors (firm specific variables)

Internal factors are factors that the firm managers have control. That is, internal factors are those that are often influenced by policies and decisions of a firm's management. The internal factors basically reflect differences related to policies and decisions of a firm's management with regard to sources and uses of capital, liquidity and expense management. Thus, the impact of internal factors on manufacturing profitability can be analyzed by looking at the balance sheet and income statement of the concerned wheat flour manufactures. Within the context of the internal factors, up on which firm's management has control, the immediate factors that would have an impact on firm profitability are those factors that affect a firm's net income. The internal factors include average payment period, debt ratio, liquidity, Inventory conversion ratio, firm size and the external factors inflation rate and RGDP growth rate.

Average Payment Period (APP):

Average payment period can be defined as the average length of time between the purchase of materials and labor and the payment of cash for them. According to Kirawa (2012), account payables plays a critical role in managing working capital because delaying bill payments is one of the tools for management to have access to an inexpensive source of financing. However, the opportunity cost of keeping high account payables may hurt the business if an early payment discount is offered in the study "the influence of working capital management components on corporate profitability: survey on Kenyan listed firms" shows that average payment period has a positive relationship with profitability. The positive relationship suggests that an increase in the number of day's accounts payable by 1 day is associated with an increase in profitability. In view of the researchers hypothesize as follows: (Mathuva ,2010)

- **Hypothesis 1.1:** *There is a significant positive relationship between the Average payment period and the firm's profitability.*

Firm size (SZ)

If the size of the firm increases the profitability also increase. We measure size (SZ) of the firm by the taking the natural log of the sales as this measure smoothens the variation in the figure over the periods of time. Large size of firms tends to be more profitable. Thus we expect a positive relationship between size and profitability of firm.(Stierwald, A. 2009)

- **Hypothesis 1.2:** *There is a significant positive relationship between the size of the firm and the firm's profitability.*

Liquidity (LIQ)

The management of the company is required to manage the fixed capital and working capital also. The management of the working capital is significant to manage liquidity in the enterprise. On one hand, the firm having higher current ratio is considered to be having better liquidity position while on the other it also indicates poor credit management and thus indicates loose or liberal management practices. The firm having lower current ratio is considered to be having inadequate margin of safety and thus poor liquidity. (Padachi,2010).

- **Hypothesis 1.3:** *There is a significant Positive relationship between liquidity of a firm and the firm's profitability.*

Inventory conversion ratio (ICR):

Inventory conversion ratio, which represents the efficiency of inventory management, is expected to be high for firms with greater profitability. A low inventory conversion ratio could indicate either poor sales or an excess amount of inventory.

Maintaining sufficiently high inventory levels reduces costs of possible interruptions in the production process and loss of doing business due to scarcity of products, while investing too much in inventories unnecessarily blocks the funds in working capital that could be invested in revenue generating activities. This leads the researcher to propose the following hypothesis: Thus, in light of the above theoretical grounds, the following research hypothesis is developed: (Mathuva, 2010),

- **Hypothesis 1.4:** *There is a significant positive relationship between the Inventory conversion ratio and the firm's profitability.*

Firm's Debt Ratio: It is a financial ratio used in accounting to show what portion of a business's assets is financed through debt. The debt to total assets ratio is an indicator of

financial leverage. It tells us the percentage of total assets that were financed by creditors, liabilities, debt (<http://www.readyratios.com>).

- **Hypothesis 1.5:** *There is a significant negative relationship between the Debit ratio of firms and the firm's profitability.*

External factors (macroeconomic variables)

External factors are those that are related to macroeconomic scenarios that reflect the economic and legal environment within which the flour manufacturing companies operate. To this effect, external factors are those factors that are beyond the control of the management of a firm, that the environment within which a manufacturing company operates have an impact on the profitability of the firm. To this effect, the external factors can be analyzed by examining the overall economic scenario within which a firm operates.

Real Gdp Growth Rate (RGGR)

GDP is one of the primary macroeconomic indicators used to measure the health of the economy of a country, and it is a measure of the overall economic output within a country's borders over a particular time, usually a year. Since economic growth and wheat flour factories sector performance are positively correlated, the real GDP growth, used in this study, is expected to have a positive impact on firm's profitability.(Eljelly,2004).

- **Hypotheses 2.1:** *There is a significant positive relationship between real GDP growth rate and firm's profitability*

Inflation Rate (INFR)

It also serves as macroeconomic variable. An increase in food inflation will tend to increase in price of food sector and high prices generate high profit. Inflation is positively related to profitability.

(P. Molyneux and J. Thornton , 1992) . So we expect a positive relationship between inflation and profitability.

- **Hypotheses 2.2:** *There is a significant positive relationship between food inflation and firm's profitability*

CHAPTER 4

4. RESULTS AND DISCUSSIONS

4.1. Introduction

In this chapter the study examines the impact of working capital management as explained by internal factors: average payment period, Debt ratio, Liquidity, Inventory conversion ratio, Size of the firm and external factors: real GDP growth rate, Food inflation on profitability of selected wheat Flour Factories in Adama city. In order to answer the research problem the study covers the following issues: the first section describes the basic features of the data in the study using descriptive statistics followed by correlation analysis which shows the linear relationship between two sets of data. The other important topic is regression diagnostics (testing the basic assumptions of classical linear regression model) which is covered in the third section. In the next two sections the chapter deals with selecting appropriate model and regression results. Finally, discussion of the main findings of the regression result and data analysis is conducted.

4.2. Data analysis

4.2.1. Descriptive Statistics

This section provides simple summaries about the sample data. Descriptive statistics in table 4.1 below reports the mean, median, maximum, minimum, standard deviations and number of

observations of each variable. The researcher used these descriptive statistics to describe and/or summarize numeric observations for both the dependent and explanatory variables.

Table 4.1: Descriptive Statistics of Variables

	ROA	APP	DR	LIQ	ICR	INFR	RGGR	SZ
Mean	0.010	141.645	0.200	18.829	0.058	0.211	0.106	7.056
Median	0.023	68.000	0.200	2.395	0.050	0.166	0.103	7.032
Maximum	0.193	1352.699	0.540	561.124	0.170	0.443	0.133	7.801
Minimum	-0.292	5.951	0.070	0.177	-0.050	-0.054	0.086	6.465
Std. Dev.	0.095	206.862	0.075	81.156	0.039	0.170	0.013	0.327
Skewness	-1.342	4.356	1.675	6.421	-0.115	0.076	0.623	0.370
Kurtosis	5.179	25.689	9.896	43.335	4.376	1.744	2.909	2.419
Jarque-Bera	23.903	1181.354	117.545	3583.585	3.894	3.202	3.119	1.772
Probability	0.000	0.000	0.000	0.000	0.143	0.202	0.210	0.412
Sum	0.494	6798.961	9.597	903.773	2.777	10.104	5.088	338.706
Sum Sq. Dev.	0.421	2011215.980	0.267	309553.408	0.073	1.351	0.008	5.034
Observations	48	48	48	48	48	48	48	48

Source: [Eview 6](#) outputs

According to table 4.1, all variables comprised 48 observations and the profitability measure used in this study namely; ROA indicates that wheat flour firms attained, on average, a positive before tax profit over the last eight years. For the target population, the mean of ROA was 1% with a minimum of -29.2% and a maximum of 19.30%. That means, the most profitable firms among the sampled firms earned 19.30 cents of profit before tax for a single birr invested in the assets of the firm. On the other hand, the least profitable firm of the sampled firms incurs 29.2 cents of loss before tax for each birr invested in the assets of the firm. The standard deviation statistics for ROA was 0.095, which indicates that the profitability variation between the selected Six wheat flour factories was small. The result implies that these firms need to optimize the use of their assets to increase the return on their assets.

Explanatory variables also presented in the table 4.1 above and the seven explanatory variables which are expected to determine the profitability of wheat flour factories are exhibited; average payment period, debt ratio, liquidity, Inventory conversion ratio, size of the firm, real GDP growth rate and food inflation have different characteristics.

Average payment period (APP) has a mean value of around 141.645. With this mean the sample data for this variable deviates from its mean by 206.862. It ranges from 5.951 to 1352.699. This indicates that selected wheat flour factories take them on average 141.645 and they have access to pay their debts properly days to pay their creditors. But there is a company that takes it 1352.699 days to do the same.

Inventory conversion ratio Capital has mean value of 0.058, and the moderate standard deviation of 0.039 and inflation rate has mean value of 0.211 and standard deviation of 0.170. This shows almost the data was nearest to the consistent because the standard deviation value is not much far from the mean value.

The liquidity ratio (CR) ranges from 0.177 to 561.124. With its mean value of 18.829 the ratio deviates from its mean value by 81.156. The average liquidity ratio greater than one indicate that on average selected wheat flour factories current assets should be able to satisfy near-term obligations.

The company's size (SZ) plays an important role to maintain the position of a company in market. The size of manufacturing companies under this study has mean value of 7.056, and the maximum and minimum values of 7.801 and 6.465 respectively. But the standard deviation value is 0.32 which shows that wheat flour manufacturing companies in Adama city have big variation in their total asset.

Table 4.1 also shows that the mean real GDP growth (RGGR) in Ethiopia for the last thirteen years was 0.106 (10.6%), with a maximum of 13.30% and a minimum of 8.60 %. Table 4.1 also presents for Real GDP growth rate a small standard deviation of 0.013; this implies that economic growth in Ethiopia during the period of 1999 to 2006 E.C remains reasonable stable. The other macro-economic variable employed in this study Food inflation (INFR), had somewhat a higher standard deviation (0.170) compared to RGDP; this implies that inflation rate in Ethiopia during the study period remains somewhat unstable.

4.2.3: Correlation Analysis

Table 4.2 below depicts correlation matrix (correlation coefficients of each pair of variables). It measures the relationship between two variables. It quantifies the extent to which two quantitative variables go together, giving a value between +1 and -1 inclusive, where 1 is total positive correlation, zero is no correlation and -1 is total negative correlation. When two variables are correlated it means that they vary together. When the relation is positive(greater than zero but less than 1), it implies that high values of one variable is associated with high values of the other variable and negative correlation(less than zero but greater than -1) it implies that high values of one variable is associated with low values of the other and vice versa.

Table 4.2: Correlation matrix of dependent and explanatory variables

	ROA	APP	DR	LIQ	ICR	INFR	RGGR	SZ
ROA	1.0000							
APP	-0.0732	1.0000						
DR	-0.1208	0.0084	1.0000					
LIQ	0.0060	-0.1156	-0.1716	1.0000				
ICR	0.1121	-0.1726	0.0066	-0.0582	1.0000			

INFR	0.2315	-0.1156	-0.0230	-0.2494	0.4503	1.0000		
RGGR	-0.0769	-0.0873	0.2627	-0.0307	0.0144	0.3070	1.0000	
SZ	0.1701	-0.1395	-0.0908	-0.1039	0.0884	0.0577	-0.3158	1.0000

Source: Eviews 6 outputs

The correlation between APP,DR,RGGR & ROA is negative. This means that selected wheat flour factories return on assets decreases as average payment period, Debit ratio and RGGR increases and vice versa. The correlation between the two has an absolute value of -0.0732 , -0.1208 and- 0.0769 quensquently which can be taken as a weak relationship between the two variables.

The correlation between ROA and CR is positive indicating that returns on assets of selected wheat flour factories increase as their current ratio (liquidity ratio) increases and vice versa. Nevertheless, it can be assumed that there is no linear association between the two variables at least during the review period with an absolute value near zero.

ROA and ICR and INFR have also positive correlation. Therefore, as selected wheat flour factories ICR and INFR ratio increases their return on assets also increases and vice versa. Again their relationship can be taken as strong relationship as the correlation coffieicient in absolute value is 0.1121, 0.2315 respectively. The same is true for the relationship between ROA and SZ. But in this case there is no linear association between selected wheat flour factory return on asset and their size as measured by their total assets (in logarithms).

Generally, it can be seen from the table that there is weak and strong linear relationship among the dependent and explanatory variables in this study.

The fact that there is a weak linear association among the explanatory variables reveals that all explanatory variables can be included in regression analysis. The independent variables with a bivariate correlation of more than 0.7 should not be included in multiple regression analysis (Tabuchnick and Fidell, 1996).

4.2.4. Regression diagnostics: Test of CLRM assumptions

This section tests whether sample data obtained from selected wheat flour factories over the period from 2007-2014 meet the assumptions of classical linear regression models. As a first look at the checking assumptions in regression distributions of variables to check for non-normality distributed variables. This is mainly because, without verifying that sample data have met the regression assumptions, the results from the regression may be misleading (Regression with SAS. UCLA: Statistical consulting group). Particularly, test for the assumption of errors has zero mean ($u_t = 0$), test for homoskedastic error, no autocorrelation or serial correlation, no perfect multi co linearity, and normality of the error term are particularly considered in this study.

4.2.4.1. Test for the assumption of errors has zero mean ($u_t = 0$)

The assumption of a zero mean in the error term is one of the assumptions underlying the classical linear regression model though it is not very restrictive. A constant non-zero mean for the disturbances affects only the intercept estimate but not the slope (Badi Baltagi, 2011). Fortunately, in many economic applications, it is the slope coefficients that are of interest and not the intercept (Badi Baltagi, 2011). The mean of the residuals will always be zero provided that there is a constant term in the regression (Chris brooks, 2014). Therefore, as long as the equation has a constant term, this assumption is satisfied. To this effect the current study included the constant term in order to meet the assumption.

Table 4.4: Breusch-Pagan F-test

Heteroskedasticity Test:

White

F-statistic	0.729239	Prob. F(28,19)		0.7812
Obs*R-squared	24.86377	Prob. Chi-Square(28)		0.6352

Scaled explained SS	34.36669	Prob. Chi- Square(28)		0.1891
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Source: Eviews 6 outputs

It can be observed from table 4.4 that the F-statistic is reported as 0.729 and the P-value is reported as 0.781. Therefore, there is sufficient evidence that the researcher fails to reject the null of homoskedasticity at 5% significance level.

4.2.4.2. Homoskedasticity

The other basic assumptions of the classical linear regression model is the assumption that states as the probability distribution of the disturbance term remains same for all observations, that is Homoskedasticity. Homoskedasticity implies that the variance of each u_i is the same for all values of the explanatory variable. However, if the disturbance terms do not have the same variance, this condition of non constant variance or non-homogeneity of variance is known as heteroskedasticity. If the assumption of constant variance is violated, the least squares estimators are still unbiased, but the Gauss-Markov theorem does not hold anymore, and standardized scores do not have the assumed distribution, and therefore test results and confidence intervals are unreliable (Bedru and Seid, 2005).

To detect whether the assumption of homoskedastic error variance is violated the current study used Breusch-Pagan test. To conduct this test the researcher first estimated the model and then kept the squared OLS estimated residuals, run an auxiliary regression of the squared OLS estimated residuals on the independent variables. Keeping the R-squared from this regression form either the F or LM test is made. According to this test, the null of homoskedasticity is not rejected if the p-value is greater than 5% and the result is reported in table 4.4

4.2.4.3 Test for Autocorrelation $\{cov(u_i, u_j) = 0 \text{ for } i \neq j\}$

The Durbin-Watson test statistic value in table 4.6 was 1.56. As mentioned in the previous chapter to empirically analyze the impact of working capital management on profitability of wheat flour manufacturing firms in Adama Town 48 (8*6) observations were used in the model. Moreover, there were 7 regressors and an intercept term in the model. Therefore, the relevant

critical values for the test are $dL = 1.189$, $dU = 1.895$, i.e., for 48 observations and 7 regressors and $4 - dL = 4 - 1.189 = 2.811$; $4 - dU = 4 - 1.895 = 2.105$. The Durbin-Watson test statistic of 1.56 is clearly between the Lower limit (dL) which is 1.189 and the critical value of $4 - dL$ i.e. 2.811 and thus the null hypothesis of no autocorrelation is within the non-rejection region of the number line and thus there is no evidence for the presence of autocorrelation.

Figure 4.1, Rejection, non-rejection, and inconclusive regions for DW test

As noted in Brooks (2008) the rejection / non-rejection rule would be given by selecting the appropriate region from the following figure:

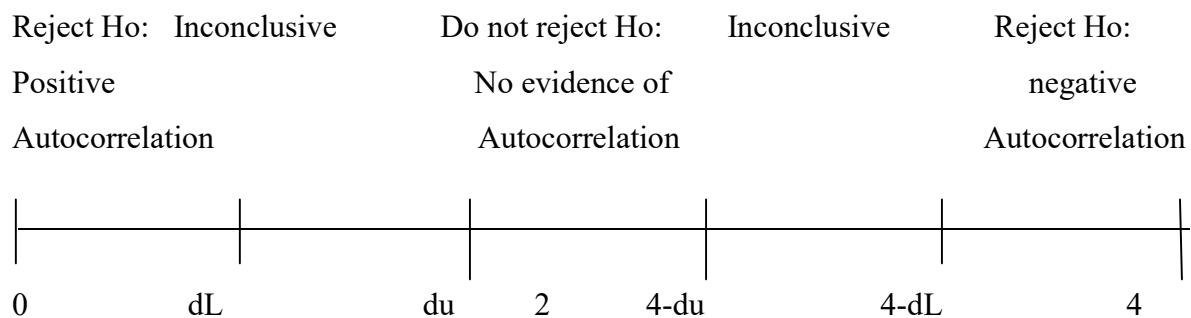


Figure 3.1 shows as Durbin-Watson has 2 critical values: an upper critical value (dU) and a lower critical value (dL).

Table 4.3 Autocorrelation Test: DW Test

Variable	DW test static result
All firm-specific & macro-economic	1.56

Source: Eviews 6 outputs

4.2.4.4. Multicollinearity

Multicollinearity refers to the presence of highly inter correlated predictor variables in regression models, and its effect is to invalidate some of the basic assumptions underlying their mathematical estimation. According to Kutner et al. (2005), multicollinearity happens when there are high correlations among independent variables. In this case, these independent variables may compete to explain much of the similar variance and it would be difficult to distinguish their

contributions to the dependent variable. Multicollinearity is nowadays utilized in a broader sense to include both the cases of perfect and less than perfect multicollinearity. If perfect multicollinearity occurs, the regression coefficients of the independent variables are indeterminate and their standard errors are infinite. If less than perfect multicollinearity happens, the regression coefficients of the independent variables are determinate, but with large standard errors, which means the coefficients cannot be estimated accurately and precisely (H. J. Zainodin and S. J. Yap, 2011).

One way to assess the possibility of multicollinearity among study variables is to perform correlations. According to Gujarati and Porter (2009) if two variables are highly correlated perhaps it suggests that the data suffer from the multicollinearity problem. Therefore, the current study used correlation coefficient between regressors to test the problem of multicollinearity. Table 4.5 summarizes correlation matrix among explanatory variables in this study.

Table 4.5: Correlation matrix among explanatory variables

	APP	DR	LIQ	ICR	INFR	RGGR	SZ
APP	1.000						
DR	0.008	1.000					
LIQ	-0.116	-0.172	1.000				
ICR	-0.173	0.007	0.058	1.000			
INFR	-0.116	-0.023	0.249	0.450	1.000		
RGGR	-0.087	0.263	-	0.014	-	1.000	

			0.031		0.307		
SZ	-0.140	-0.091	0.104	0.088	0.058	-0.316	1.000

Source: Eviews 6 outputs

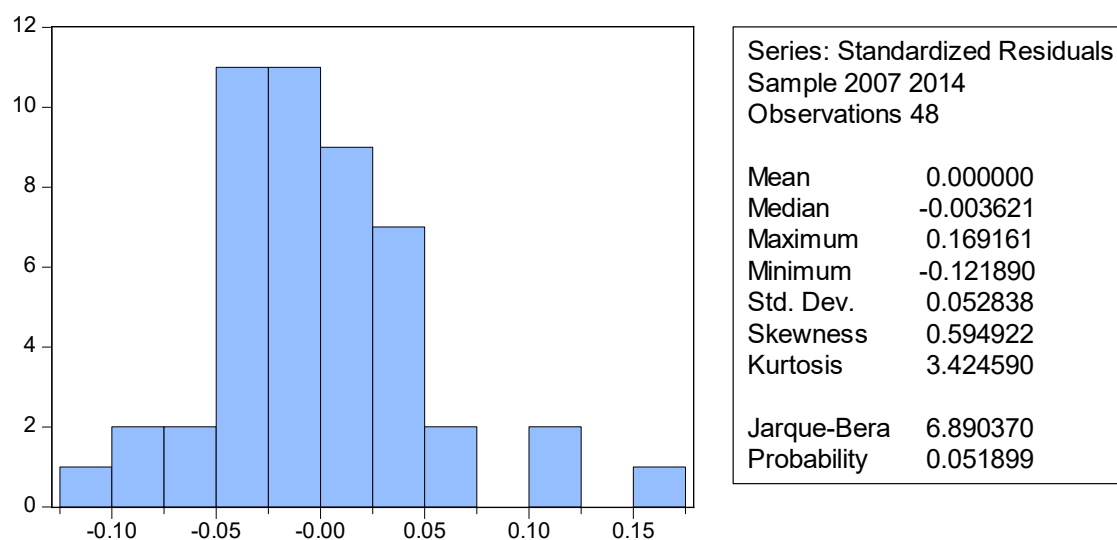
As it can be seen from the correlation coefficient of explanatory variables, the highest correlation coefficient observed is the correlation between ICR and INFR which is 0.45. Therefore, it can be concluded that the data in this study is free from the problem of multicollinearity.

4.2.4.5. Test for normality $\{ut \sim N(0, \sigma^2)\}$

The fourth diagnostic test for CLRM assumption of normality assumption was tested by this study. The assumption says that disturbances are normally distributed. According to Chris Brooks (2008), one of the most commonly applied tests for normality is the BeraJarque test. BeraJarque uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments the mean and the variance. This assumption is required in order to conduct hypothesis testing, particularly if the sample size is small. For sample sizes that are sufficiently large, violation of the normality assumption is virtually inconsequential (David Kreiberg, 2009). If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant.

The normality tests for this study as shown in figure 4.2, the coefficient of kurtosis was above 3 and the kurtosis is close to 3 the Bera-Jarque statistic had a P-value of 0.0518 which is nearest to 5% implying that the data were consistent to the round normal distribution assumption.

Figure 4.2 Normality test for residuals



Source: Eviews 6 outputs

4.2.4.6. Results of regression analysis

This section presents the empirical findings from the econometric results on impact of working capital on profitability of Wheat flour factories in Adama town. The section covers the empirical regression model used in this study and the results of the regression analysis.

Empirical model: As presented in the third chapter the empirical model used in the study in order to examine the impact of working capital on profitability of Wheat flour factories in Adama town was provided as follows.

$$ROA_{i,t} = \alpha + \beta_1 APP_{i,t} + \beta_2 DR_{i,t} + \beta_3 IIQ_{i,t} + \beta_4 ICR_{i,t} + \beta_5 INFR_{i,t} + \beta_6 RGGR_{i,t} + \beta_7 SZ_{i,t} + \varepsilon_{i,t}$$

The estimation result of the operational panel regression model used in this study is presented in table 4.6. From table 4.6 the R-squared statistics and the adjusted-R squared statistics of the model was 68.83% and 58.14% respectively. The result indicates that the changes in the independent variables explain 68.83% of the changes in the dependent variable. That is Average payment period, Inventory conversion ratio, Debt ratio, growth opportunity, size of the firm, liquidity and food inflation rate collectively explain 68.83% of the changes in ROA. The remaining 31.17% of changes was explained by other determinants which are not included in the model. Thus these variables collectively, are good explanatory variables of the profitability of wheat flour manufacturing in Adama city. The null hypothesis of F-statistic (the overall test of significance) that the R² is equal to zero was rejected at 1% as the p-value was sufficiently low.

F value of 0.00000 indicates strong statistical significance, which enhanced the reliability and validity of the model.

Based on the results shown in table 4.6, from firm-specific independent variables firm size, Inflation rate, Inventory conversion ratio and RGGR had statistically significant impact on profitability of wheat flour manufacturing. On the other hand, other variables, i.e., Debt ratio and liquidity, are insignificant variable. Among the significant variables, size of the firm and inflation rate was significant at 1% significance level, since the p-value for this variable were **0.0094 and 0.0011**. This means size of the firm and inflation rate have great contribution to their profitability. The result also shows that manufacturing firms should focus on to raise their sales level to enhance profitability. Whereas variables APP and ICR of the firm were significant at 5% significance level, since the p-value were **0.0528 and 0.0313** respectively.

Finally, RGGR was significant at 10% significance level, since p-value was **0.0776**.

Table 4.6

Regression Results for determinants of wheat flour factory profitability.

Method: Panel Least Squares

Date: 11/20/15 Time: 17:51

Sample: 2007 2014

Periods included: 8

Cross-sections included: 6

Total panel (balanced) observations: 48

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.772278	0.274762	-2.810721	0.0080
APP	0.000105	5.23E-05	2.004723	0.0528***
DR	-0.151334	0.145209	-1.042184	0.3045
LIQ	9.42E-05	0.000127	0.742466	0.4628
ICR	-0.656095	0.292411	-2.243741	0.0313***
INFR	0.249268	0.070087	3.556544	0.0011*
RGGR	1.519647	0.835914	1.817945	0.0776**
SZ	0.087948	0.031977	2.750367	0.0094*
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.688349	Mean dependent var	0.010292	
Adjusted Rsquared	0.581498	S.D. dependent var	0.094648	
S.E. of regression	0.061230	Akaike info criterion	2.522558	
Sum squared resid	0.131217	Schwarz criterion	2.015774	
Log likelihood	73.54138	Hannan-Quinn criter.	2.331043	
F-statistic	6.442106	Durbin-Watson stat	1.56063	
Prob(F-statistic)	0.000007			

***, **, and * denote significance at 10%, 5%, and 1% levels respectively.

Source: Financial statements of wheat flour factories, MoFED reports and own computation,views

In addition, table 4.5 also shows that the coefficient of Debt ratio, Inventory conversion ratio of firms against ROA were negative as far as the coefficients for those variables are negative - 0.151, -0.656 respectively. This indicates that there was an inverse relationship between the aforementioned five independent variables and ROA. Thus the increase of those variables will lead to a decrease in ROA. On the other hand, variables like Average payment period, liquidity, INFR, real GDP growth and size of the firm had a positive relationship with profitability as far as their respective coefficients were 0.0001, 9.42, 0.02492, 1.5196, 0.0879 respectively. This revealed that there was a direct relationship between the above six independent variables and ROA. In general as per the regression results provided in table, 4.5 among the seven repressors used in this study five of them were significant.

In general, so far, the results of the documentary analysis which includes tests for the classical linear regression model, descriptive statistics, correlation matrix & regression analysis have been presented. The results of the tests for the classical linear regression model showed as the data fit the basic assumptions of CLRMs.

4.3. Analysis of data

This section of the chapter discusses the analysis of the results. The analysis is based on the theoretical framework and the data was collected. The data are analyzed in light of the specific research hypotheses stated. Hence, the analysis focuses mainly on the results of the regression analysis for the selected wheat flour factories-specific and macro-economic factors that have an impact on wheat flour factories profitability. These selected factories, average payment period, debt ratio, liquidity, inventory conversion ratio, food inflation, real GDP growth rate, and size of the firm.

RGGR

The coefficient of capital strength which is measured by RGGR was positive and statistically significant at 10% significance level ($p\text{-value}=0.0776$). The positive coefficient for RGGR strength was in favor of the signaling or bankruptcy costs hypotheses and in opposite to the risk-return trade-off hypothesis. Moreover, the coefficient of the RGGR was relatively higher as compared to other variables shows that an increase in RGGR strength will result in increased profitability. Furthermore, the finding was point out that profitability is positively affected by RGGR.

Firm size

Firm size which is measured by the natural log of total assets had a positive impact on the profitability of wheat flour manufacturing firms in Adama adama and conforms to a prior restriction. The variable was also statistically significant in the model at $p=0.01$ significance level even. Further, the positive coefficient between selected wheat flour factories in Adama city firm's size and profitability clearly indicated that larger firms of the Town are better placed than smaller firms of the town in harnessing economies of scale in transactions. From this one can conclude that size of the firm have great contribution to their profitability and the result also shows that manufacturing company should focus on to raise their sales level to enhance profitability. The finding was in consistent as sited by wasiyhun tuse (2015) & defined with the finding of Nousheen Tariq Bhutta and Arshad Hasan (2013), Mesfin (2014).

Liquidity

Liquidity of the firm has a coefficient value of 9.42, which is the highest coefficient value from the independent variable, which shows specific increment in the rates of liquidity of the company, there was 9.42 increment in the value of dependent variable, i.e. ROA. And it was also insignificant, which has p-value of 0.4628. This shows that liquidity of the firm was not strong determinant factor in determining the profitability of wheat flour manufacturing firms of Adama town, during this research period. The finding was inconsistent as sited by wasiyhun tuse (2015) and defined on the finding of Mesfin (2014).

Inventory conversion ratio

Inventory conversion ratio of the firm has a coefficient value of -0.656, which shows increment in inventory conversion ratio , there was 0.656 increment in the value of dependent variable, i.e. ROA. And it was very significant at 0.05 significant level, which has p-value of 0.0313. This shows that ICR of the firm has strong determinant factor in determining the profitability of wheat flour manufacturing firms of Adama town, during this research period.

Average payment period

Average payment period has a positive coefficient but it is insignificant relationship to profitability. The coefficient value is 0.0001. This means any increase in these variables leads to increase in profitability of manufacturing company in Adama city. But the value of increment in profitability was not significant because the value of growth coefficient were small. It has also p-value of 0.0528, which have weak impact on the profitability of wheat flour manufacturing company in Adama town, which is inconsistent with the study of Girma (2015).

The coefficient of the ratio of operating cost to income, which is 0.000123 which provides information on the efficiency of the management regarding expenses relative to income, was positive but statistically insignificant, which has a p-value of 0.9374. the coefficient result shows that an addition increment in operation cost changes the value of ROA by 0.000123 and the result of p-value 0.9374 shows that operating cost efficiency has weak impact in determining the profitability of wheat flour manufacturing firms of Adama Town, during the past eight years.. This finding was inconsistent with previous studies, e.g. Athanasoglou et al.(2008), Feysa (2014)

Debt ratio

Debt ratio has a negative coefficient and it shows insignificant relationship with profitability of wheat flour manufacturing firms those operating in Adama town. The coefficient value is -0.1513 . It means change in debt ratio will bring negative change in profitability by -0.1513 . Debt ratio has t-value of -1.042 against a p-value of 0.3045. Thus our hypothesis is rejected by the statically insignificant negative relationship between tangibility and profitability. It shows that a firm has less debit ratio will be more profitable.

Inflation

As it is expected, the coefficient of food inflation was positive, 0.2492, and also statistically significant, thus, the effect of inflation on wheat flour manufacturing profitability of Adama town is significant. The findings also suggested that food inflation is a significant determinant of firm's profitability in wheat flour manufacturing's of Adama city, as far as the parameter for this variable is significant as illustrated by the small p-values of 0.0011. so, the result of this study clearly shows as food inflation has a positive impact on profitability and statistically significant

determinant of firms profitability In terms of food inflation impact on ROA, previous studies of Nousheen Tariq Bhutta and Arshad Hasan (2013) showed a positive coefficient result but resulted at insignificant interval level, which shows inconsistent with the this study.

Chapter 5

5. Conclusions and Recommendations

5.1. Conclusions

Adequate amount of working capital is very essential for smooth running of any enterprise in general and wheat flour manufacturing in particular. Taking this into account the current paper has tried to shed light on the relationship between working capital management as explained by average payment period, inventory conversion ratio, liquidity, firm's debt ratio, real GDP growth rate, inflation rate and firm size and the profitability of selected wheat flour manufacturing as explained by ROA.

Taking sample data from selected wheat flour factories operating in Adama over the period from 2007-2014 the paper tried to empirically examine the impact of these explanatory variables on ROA. In order to answer the research questions the researcher employed both descriptive statistics and fixed effect model using Eviews 6 statistical package. The analysis of trend of variables in the model by industry shows that there is heterogeneity or individuality among the industries in various respects which indicates that pooled regression model does not fit the sample data. The correlation analysis, on the other hand, shows that there is a weak linear relationship among the variables. The fact that there is a weak linear relationship (below 0.5) among the explanatory variables indicates that there we can include all the explanatory variables in the model.

The study also tried to empirically test the impact of APP, ICR, LIQ, DR,INF,SZ and RGGR on ROA of selected wheat Flour Factories in Adama town employing fixed effect model. The result from the empirical examination found that the ratio of average payment period, inventory conversion ratio, inflation rate, real GDP growth rate and firm size as measured by the total asset

of selected wheat flour factories have a statistically significant effect on the ratio of profit before income tax to total asset of the industries (ROA) based on these sample data. The explanatory variables in the model are able to explain about 69% of the variation in the dependent variable ($R^2=0.69$) and the overall model is jointly significant (F-statistic).

The fact that our D-W statistic is close to two indicates that the model is also free from the problem of multicollinearity.

In Adama debt ratio and inventory conversion ratio affects profitability of selected wheat flour factories negatively to the best of our sample data. The fact that there exists a highly significant positive relationship between the time it takes the firm to pay its creditors (average payment period) and profitability, implies that the longer a firm takes to pay its creditors, the more profitable it is. The study also conducted post estimation residual diagnostic tests and found that the residuals are normally distributed, free from the problem of heteroskedasticity, autocorrelation and multicollinearity.

5.2. Recommendations

Monitoring the working capital is important for the selected wheat flour factories cash flow and their ability to meet their obligations when they fall due. However, they optimize this to ensure that their credit worthiness is not compromised, take advantage of discounts including avoiding incurring unnecessary costs.

According to the findings of this paper, I recommend that managers of selected wheat flour factories operating in Adama city should concentrate on impact of working capital management on profitabilities in general and debt ratio and inventory conversion ratio in particular in order to maximize the factories' profits and thereby stakeholder's wealth, since this measure is found to be the major determinant of the profitability of selected wheat flour factories. The researchers study has also revealed that firm size in terms of their total assets has been recognized as an essential variable in explaining selected wheat flour factories' profitability. Therefore, Managers of these wheat flour factories are also expected to change practices of working capital management that adversely affect wheat flour factories total asset and profit and are also expected the willingness of share holders for the change of managing their factories. Furthermore, the result of this study informs and gives initiation for other researchers to

undertake further and detailed studies on the impact of working capital management on profitability.

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Appendix : Ratio Data

Company									
year	name	ROA	App	DR	LIQ	ICR	INFR	RGGR	SZ
2007	YF	0.019	265.005	0.303	2.789	0.050	0.175	0.115	6.691
2008	YF	0.003	347.427	0.239	3.668	0.030	0.349	0.112	6.625
2009	YF	0.008	309.167	0.208	2.867	0.100	0.443	0.097	6.783
2010	YF	0.018	168.226	0.194	3.146	-0.030	-0.054	0.102	6.96
2011	YF	0.019	114.432	0.14	3.008	0.050	0.157	0.133	7.2
2012	YF	0.016	111.002	0.146	3.665	0.020	0.429	0.086	7.219
2013	YF	0.018	416.836	0.089	3.755	0.040	0.126	0.099	6.78
2014	YF	0.009	207.578	0.088	4.678	0.050	0.059	0.104	6.752
2007	AWF	0.006	21.299	0.07	15.466	0.050	0.175	0.115	6.563
2008	AWF	0.005	30.928	0.08	11.073	0.100	0.349	0.112	6.597
2009	AWF	-0.057	18.294	0.14	8.136	0.120	0.443	0.097	6.776
2010	AWF	-0.006	20.700	0.12	561.124	0.030	-0.054	0.102	6.744
2011	AWF	0.027	15.396	0.15	7.812	0.050	0.157	0.133	6.731
2012	AWF	0.13	15.396	0.12	0.724	0.050	0.429	0.086	7.509
2013	AWF	0.032	20.027	0.25	0.985	0.050	0.126	0.099	7.573
2014	AWF	0.087	73.798	0.17	86.474	0.100	0.059	0.104	7.779

2007	MAF	0.028	45.000	0.25	35.049	0.100	0.175	0.115	6.778
2008	MAF	0.034	5.951	0.16	24.223	0.050	0.349	0.112	6.809
2009	MAF	0.046	25.888	0.2	0.177	0.070	0.443	0.097	7.229
2010	MAF	0.015	67.876	0.15	1.233	0.050	-0.054	0.102	6.955
2011	MAF	0.027	52.031	0.22	5.848	0.050	0.157	0.133	7.126
2012	MAF	0.193	67.000	0.15	4.916	0.020	0.429	0.086	7.428
2013	MAF	0.031	61.932	0.24	17.026	0.030	0.126	0.099	7.801
2014	MAF	0.016	58.000	0.18	26.569	0.080	0.059	0.104	7.584
2007	WF	0.068	68.000	0.27	24.409	0.100	0.175	0.115	6.765
2008	WF	0.078	37.000	0.18	7.065	0.170	0.349	0.112	6.903
2009	WF	0.137	27.000	0.19	8.320	0.120	0.443	0.097	7.1
2010	WF	0.046	53.000	0.23	4.776	-0.030	-0.054	0.102	6.611
2011	WF	0.052	52.030	0.54	1.706	0.050	0.157	0.133	6.465
2012	WF	0.104	87.054	0.18	0.715	0.100	0.429	0.086	7.255
2013	WF	0.1	42.081	0.21	1.134	0.060	0.126	0.099	7.51
2014	WF	0.026	22.000	0.23	2.001	0.100	0.059	0.104	7.443
2007	YERF	-0.133	199.164	0.24	1.407	0.010	0.175	0.115	7.104
2008	YERF	0.092	157.913	0.2	1.566	0.060	0.349	0.112	7.325
2009	YERF	0.03	133.911	0.18	1.655	0.070	0.443	0.097	7.373
2010	YERF	-0.212	135.691	0.21	1.739	0.050	-0.054	0.102	7.023
2011	YERF	-0.111	267.643	0.23	1.271	0.050	0.157	0.133	7.008
2012	YERF	-0.219	309.333	0.27	0.983	0.050	0.429	0.086	6.824
2013	YERF	-0.292	181.586	0.22	0.612	0.060	0.126	0.099	7.132
2014	YERF	-0.22	236.667	0.28	0.385	0.047	0.059	0.104	7.042
2007	BOF	0.006	74.000	0.22	1.407	0.080	0.175	0.115	7.104
2008	BOF	0.005	25.000	0.26	1.566	0.060	0.349	0.112	7.325
2009	BOF	-0.057	68.000	0.18	1.655	0.110	0.443	0.097	7.373
2010	BOF	-0.006	229.000	0.11	1.739	-0.050	-0.054	0.102	7.023
2011	BOF	0.027	42.000	0.24	1.271	0.050	0.157	0.133	7.008
2012	BOF	0.13	291.000	0.27	0.983	0.050	0.429	0.086	6.824
2013	BOF	0.032	168.000	0.22	0.612	0.050	0.126	0.099	7.132
2014	BOF	0.087	1352.699	0.18	0.385	0.050	0.059	0.104	7.042

