The Effect of Working Capital Management on Firm Profitability: Evidence from Selected Wholesale Trade Firms in Addis Ababa, Ethiopia

A thesis Submitted to the School Graduate Studies of Jimma

University Partial Fulfilment of the Award of the Degree of Masters of

Accounting and finance

By:

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JIMMA UNIVERSITY

COLLEGE OF BUSINESS & ECONOMICS

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JUNE, 2017

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Under the Guidance of

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DECLARATION

I hereby declare that this thesis entitled "The Effect of Working Capital Management on Firm Profitability: Evidence from Selected Wholesale Trade Firms in Addis Ababa", has been Carried out by me under the guidance and supervision of Ato Tadele Tesfay (Ass. Professor) and Ato Mohammed Sultan.

The thesis is original and has not been submitted for the award of degree of diploma any university or instructions.

Researcher's Name Date Signature

CERTIFICATE

This is to certify that the thesis entities "The Effect of Working Capital Management on Firm Profitability: Evidence from Selected Wholesale Trade Firms in Addis Ababa", Submitted to Jimma University for the award of the Degree of Master of Accounting and Finance and is a record of Valuable research work carried out by Zewdu Negalign, under our guidance and supervision

Therefore we hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree of diploma.

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Co-Advisor's Name	Date	Signature

Abstract

Working capital management has a vital role for success or failure of a firm because of its immediate impact on profitability as well as liquidity. Because of its routine nature of working capital management is the most important one among all issue of financial management. The purpose of this study is to examine the impact of working capital management on profitability of selected large tax payers wholesale firms found in Addis Ababa city. In order to achieve the objectives this study quantitative approaches and explanatory research design were employed. The study was used audited financial statement of six two (62) purposively selected large tax payers wholesale firms for a period of five years (2011-2015) with the total of 310 observations. Accounts receivable period, inventory holding period, account payable period and cash conversion cycle were used as independent variable to measure working capital management. Current assets to total assets ratio and current liabilities to total assets ratio were used to measure working capital investment and financing policy respectively. The dependant variable, firm profitability was measured by return asset. For data analysis the study used descriptive analysis, correlation analysis and a random effects regression model. The result of random effect regression sowed that; there was positive relation between account receivable period and profitability indicating that aggressively collecting receivable adversely affects sample whole sale firms profitability. There was positive relation between inventory holding period and profitability suggesting that maintaining high inventory increase sales. Accounts payable period had significant negative impact on profitability indicate that less profitable firm wait longer periods to pay their obligation. There was significant negative relation between cash conversion cycle and profitability suggesting that sample wholesale firm improve their profitability by shortening the time gap between firm's actual cash inflows and outflows. There was significant positive relation between current assets to total assets ratio and profitability means that sample wholesale should invest more in working capital than fixed asset in order to get more profit. The study conclude that liberal credit collection, holding high inventory, quick payment of debt and keeping the length of cash conversion cycle to possible minimum level can increase the profitability of a firm.

Key words: Working capital management, working capital policy, Profitability, wholesaler, panel data

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List of acronyms and abbreviations

APP:	Accounts payable period
ARP:	Accounts receivable period
CATAR:	Current asset to total asset ratio
COGS:	Cost of goods sold
CCC:	Cash conversion cycle
CLTAR:	Current liability to total asset ratio
CR:	Current ratio
DR:	Debt ratio
FS:	Firm size
GOP:	Gross operating profit
IHP:	Inventory holding period
NPM:	Net profit margin
NWC:	Net working capital
OLS:	Ordinary least square
ROA:	Return on asset
ROE:	Return on equity
ROI:	Return on investment
SG:	Sales growth
SPSS**:**	Statistical package for social scientists
WCM:	Working capital management
WCP:	Working capital policy
ERCA:	Ethiopian revenue and custom authority
CLRM:	Classical linear regression model

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

There are three core areas in which financial managements devote most effort in decision making in the field of corporate finance. These are capital budgeting deals related with resource allocation and long term investment decision, capital structure deals with specific mixture of debt and equity source of finance and working capital management involves how to manage firm's current asset and current liability (Ross et al., 2008).

Working capital means the amount of investment in short lived asset that changed in to cash within operating cycle. It includes cash and marketable securities, trade receivables, inventories, trade payables and bank loans (Pandey, 2000). In other terms working capital formed as result of time difference between expenditure on purchase of raw material or products and inflow of cash on sale of produced goods or purchased products (Shin and Soenen, 1998). Working capital is described as the capital available to undertake the day-to-day activities of business. Working capital management involves the decision related to the amount and composition of current assets and current liability.

Working capital management is a very important part of corporate finance because of its immediate effect on profitability of a company as well as liquidity (Arshad and Gondal, 2013). Working capital has undeniable role for success of firm since the primary objective of any firm is to maximize profit and increase shareholders wealth (Raheman and Nasr, 2007). In order to achieve this objective efficient working capital management play a great role. Efficient working capital management means making decision on components of working capital by considering its effect on profitability as well as liquidity (Arshad and Gondal, 2013). Efficient working capital management involves managing and controlling current assets and current liabilities in order to prevent the risk of a company's inability to meet short term obligations and to avoid excessive investment in current asset (Eljelly, 2004). Effective working capital management leads to better profitability, increase cash flows, decrease needs of external financing and reduce business failure (Charitou et al., 2010). Therefore working capital management is not only important to

reduce risk and failure of business, but also necessary for long lasting success of any business. Because of this working capital management is the most important and requires continuous decision making process in the field of financial management.

Every business requires working capital for its long lasting success because of its immediate effect on liquidity, solvency and profitability. Working capital management is the crucial area of financial management and plays a vital role in any industry. However, the level of working capital needs vary from industry to industry based on the nature of operation. Trading and financial firms require a large sum of money to be invested in working capital, but less amount of funds invested in fixed asset. Wholesale and retail firm's needs high amount of money invested in working capital, but requires less amount of investment in fixed asset. Thus, efficient management of working capital has a vital role for trading and merchandise firms for successful day to day operation of their business. In contrast, service rendering firms like public utilities have a very limited need for working capital and have to invest abundantly in fixed assets. Manufacturing firms' needs working capital which is more than service rendering firms and less than that of trading and financial firms and investing both in working capital and fixed asset proportionally(Nair, 2011).

There is no actual standard or rule of thumb on the amount of working capital needs for the day to day operations of the firm. It depends on many factors such as nature and size of business, production policy, growth and expansion, supply and demand of market, sales volume, management ability, external environment, price level change and working capital management policy (Brigham and Houston, 2003). In order to make optimal decision on working capital management a firm should maintains appropriate amount of working capital component by considering the balance between profitability and liquidity of the firm. Profitability position should not be at expense of the liquidity position and liquidity should not be at the expense of profitability because both have their own importance for long lasting success of firm. Therefore, the level of working capital should balance between profitability and liquidity (Raheman and Nasr, 2007).

Cash conversion cycle is the best to measure overall of working capital management efficiency because it includes the effect the numbers of periods and the amount of capital used at each different stage of the operating cycle (Shin and Soenen, 1998). The longer the time on cash

conversion cycle shows the larger investment in working capital which results lower profitability on the contrary, the longer cash conversion cycle indicate that the firm has high potential to meet day to day obligation and lower risk of the firm (Brigham and Houston, (2003) . Excessive levels of working capital results reduction of profitability of firms, on the other hand firms with too few current assets leads to shortage and difficulties in maintaining day to day business operations requirements (Horne and Wachowicz, 2009). Generally the success of any business greatly relays on the ability of financial management to effectively and efficiently managing of working capital components.

Working capital policy a firm follows has significant impact on corporate profitability and liquidity. Decision related to how match amount a firm should invest in short term asset and the ways used by a firm to raise funds is called working capital policy. The more firms follow aggressive working capital policy, the lower investment in current asset the higher the profitability will be however the risk of a firm also rises due to inadequate level of working capital. Thus, working capital policy a firm adapts on investment and financing of working capital should compromise between profitability and risk of a firm in order to achieve firm objective (Watson and Head, (2007).

Keep the above in mind it is a critical issue to know and understand the effects of working capital management on firm's profitability. Indeed, a lot of research have been conducted in different parts of the world to examine the impact of working capital components on firm's profitability like (Raheman & Nasr, 2007; Mathuva, 2010 ; Charitou et al., 2010; Niresh, 2012; Arshad & Gondal, 2013; Amit Das, 2015). Despite to this there were few studies conducted in Ethiopia on the impact of working capital on firm's profitability focus only on manufacturing firms, none of that focus specifically on wholesale trade firms. Tewodros (2010), Mulalum (2011), Tiringo (2013), Henok (2015), Niman (2015), Arega et al. (2016), Abnet (2016) studied the impact of working capital management on profitability in case of manufacturing firms. However, to the best of the researcher knowledge, no any research has been conducted on impact of working capital management on profitability of wholesale trade firms in Addis Ababa. Due to the importance of working capital management on profitability of firm and because of the topic was under-researched in the wholesale trade industry, the researcher was inspired to study the impact of working capital management on firm's financial performance.

Therefore, the main aim of the study is to examine the impact of working capital management and its components on firm profitability of selected large tax payer's wholesale trade firms in Addis Ababa city.

1.2. Statement of the problem

Profitability and liquidity are the most crucial issues that management of each organization should consider when studying and thinking about working capital management. Liquidity refers to the ability of a firm to meet its short term obligations whereas profitability is a measure of the amount by which a firm's revenue exceeds its relevant expenses. Both profitability and liquidity are necessary for survival and success of the firm. In order to achieve twin objective of the firm profitability and liquidity effective working capital management play great role (Niresh, 2012).
Firms can maximize their profits by maintains appropriate level of working capital (Deloof, 2003). Firms have large inventory and liberal trade credit policy leads to higher sales. Larger inventory reduces the risk of stock-outs and decrease cost of production during inflation. Trade credit stimulates sales because it allows customers to assess product quality before paying (Gill et al., 2010; Shin & Soenen, 1998). On the other hand the more firm invest on receivable and inventory leads to reduction of profitably and harm the present value of cash follows (Deloof, 2003). Thus, the greater the investment in current assets, the lower the risk but also the lower the profitability obtained (Charitou et al., 2010). The existence of excessive and inadequate working capital level leads to reduction of profit of business and unable to meet day to day obligation respectively (Samiloglu & Demirgunes, 2008). In order to maintains optimal level of working capital it should be strike between profitability and liquidity.

Another component of working capital is accounts payable. Delaying payments to suppliers allows a firm to assess the quality of the products bought and can be an inexpensive and flexible source of finance. On the other hand, late payment of invoices can be very costly if the firm is offered a discount for early payment (Raheman & Nasr, 2007). Therefore, any financial manager should maintain appropriate level of working capital by avoiding excess and inadequate investment on the amount of working capital since the main objective of working capital management is to certain that a firm has sufficient cash follows to meet short term debt and to satisfy some unexpected cash needs. However, making decision on working capital is more

challenging to many financial managers due to that, working capital decision is continues until the life of business ends and very sensitive to change to various factor.

Many financial managers face the problem of identifying the important derivers of working capital management that can enhance their company profitability. According to Lamberson (1995) working capital management has become a major phenomenon in today's era especially in developed countries. A lot of research has been conducted in different countries of the world however, the result was mixed and inconsistent. Majority of researchers conclude that there was strong inverse relationship between number of day inventories, number of days account receivable and cash conversion cycle with corporate profitability (Deloof, 2003); (Raheman & Nars, 2007); (Niman, 2015) and positive relationship between number of days accounts payable with the corporate profitability (Lazaridis &Tryfonidis, 2006); (Mathuva, 2010); (Makori & Jagongo, 2013); (Tirngo, 2013). It means that the longer cash conversion cycle, the longer receivable period, the higher inventory level, and shorter payable period results lower profitability.

Other researchers like Gill et al. (2010), Sharma & Kumar (2011), Ali & Ali (2012) argues that there was positive relationship between cash conversion cycle with profitability and negative relation between account payable period with firm profitability(Arega et al., 2016) and (Şamiloğlu & Akgün, 2016). That means that, the longer cash conversion cycle, the greater investment in working capital which leads to higher profitability since maintaining high inventory levels is expected to increase sales, reduce supply costs and reduce cost of possible interruption in production (Blinder &Maccini, 1991). A longer receivable period also strengths the relationship with customers and hence may lead to an increase in sales revenue (Ng et al., 1999). The shorter firm takes to pay its obligation results higher profitability.

There were some other researchers like Yadav & Kumar (2014), Bjorkman & Hillergren (2014), Amitdas (2015) found that there was no significant relationship between components of working capital management and profitability. Even if there were a lot of research exists on working capital management, the results of those studies were mixed and lack consistent across different country of the world, and from industry to industry type to be studied. Still there is debate on the effect of working capital management and its component on profitability and open for further

investigation. Thus, this study tries to minimize the mentioned knowledge gap by studying the impact of main working capital management components towards profitability of firm.

Efficient working capital management plays a magnificent role in order to improve profitability and to create value for shareholders. Since the objective of any firm is to be more profitable especially in retail and wholesale industry management of working capital is a part of day to day operation and its effect on profitability should be considered. As long as working capital management has an impact on performance of firm it should be managed in the way profitability would be improved (Louw, 2014). Chuansim (2016) found that wholesale and retailers managers should adopt working capital strategies that have positive impact on the firm's performance. Dong & Chen (2014) carried out a study on wholesale and retail industry and they suggest that the strategic choices developed by the wholesale and retail industry do indeed affect their working capital management efficiency. In context of Ethiopia many merchandise business do not properly manage their working capital due to that mostly their working capital management practices were performed based on experience and intuition, instead of scientific management techniques and lack competent strategic dynamic management techniques (Deresse &Abiy, 2014).

There have been studies conducted in different countries on the impact of working capital management on profitability of wholesale and retail industry. Bjorkman &Hillergren(2014) carried out a study on the relationship between working capital management and profitability in the Swedish wholesale industry. They found that working capital management has no strong effect on profitably of Swedish wholesalers. Louw (2014) found that profitability of retailers firms highly dependent on working capital management. Hassan &Ibrahim Ali (2016) investigate effects of working capital management on firm profitability in merchandise companies in Mogadishu, Somalia and found that working capital management components had a significantly influence on firm profitability of merchandise firms. Chuansim (2016) study on the impact working capital management influence the performance of wholesale and property industry in Malaysia and found that profitability of wholesale and property industry highly influenced by working capital management efficiency of a firm. Despite to the paramount impact of working capital management on profitability however, in case of Ethiopia up to the knowledge of the researcher, no any empirical studies conducted on the impact of working

capital management on profitability of wholesale trade industry. Thus, the researcher believed that there is problem of working capital management on wholesale industry and it was untouched. The result intends to improve the knowledge gap, to give better understanding about the importance of working capital management and to equip each respective firm financial manager better understanding on working capital management.

In general lack of prior empirical evidence on working capital management in Ethiopian wholesale trade industry and due to the existence of working capital management problem in the industry, the importance of working capital management, its different components and its effects on profitability inspire the researcher wants to put his contribution on the impact of working capital management on profitability, how and in what extent working capital management affect profitability of selected large tax payers wholesale trade industry in Addis Ababa , Ethiopia.

1.3. Objectives of the study

1.3.1. General objective

The general objective of this study is to examine the impact of working capital management on firms' profitability of selected wholesale trade firms in Addis Ababa, Ethiopia.

1.3.2. Specific objectives

1. To investigate the effect of accounts receivable period (ARP) towards the firms profitability.
2. To examine the impact of inventories holding period (IHP) towards the firm's profitability.
3. To investigate the effect account payables period (APP) towards the firm's profitability.
4. To investigate the effect of cash conversion cycle (CCC) towards firms profitability.
5. To find out the impact of current asset to total asset ratio (CATAR) on profitability of firm.
6. To identify the impact of current liability to total asset ratio (CLTAR) on profitability of a firm.

1.4. Hypothesis of the study

As per the objective of the study stated above, the following research hypotheses (H) were developed with their respective basis.

The levels of accounts receivable a firm maintain have a significant impact on a company's profitability. Many researchers like Deloof (2003), Laziridis &Tryfonidis (2006),

Padachi(2006), Raheman &Nasr (2007), Samiloglu & Demirgunes (2008), Falope &Ajilore (2009), Mathuva (2010), Ponsian et al. (2014), Samiloglu &Akgun (2016) found that significant negative relationship between account receivable and profitability. It means that a firm enhance their profitability by minimizing account receivable to possible minimum level. Others like Sharma & Kumar (2011), Ali & Ali (2012), Uremadu & Egbide (2012), Tariq et al. (2013), Mbawniet al. (2016) found that significant positive relationship between account receivable and profitability. It means that firm enhance their profitability by keeping account receivable to maximum level. Finally this study developed the following hypothesis agree with holding higher amount of receivable results lower profitability.

H1: - There is significant negative relationship between accounts receivable period (ARP) and firm's profitability.

The level of inventory hold by a firm has strong impact on profitability. Mathuva (2010), Makkori &Jagongo (2013), Abenet(2016), Samiloglu &Akgun (2016) found a significant positive relationship between profitability and levels of inventory. It means that a firm enhance their profitability by holding higher amount of inventory. On the other hand, other researchers like Padachi (2006), Raheman & Nasr (2007), Samiloglu &Demirgunes (2008), Charitou et al. (2012), Tiringo (2013), Ponsian et al. (2014), Arega et al. (2016) found significant negative relationship between inventory level and profitability. It means that profitable firms are those which holds minimum amount of inventory on warehouse. The following hypothesis is developed by supporting negative relationship between inventory level and profitability.

H2:-There is significant negative relationship between inventories holding period (IHP) and firm's profitability.

The amount of account payable has significant impact on profitability. Researchers like Padachi (2006), Raheman & Nasr (2007), Charitou et al. (2012), Tariq et al. (2013), Samiloglu & Akgun (2016) found significant negative relationship between account payable period and profitability. This shows that less profitable firm's takes longer time to pay their obligation. On the other hand, other researchers Mathuva (2010), Falope &Ajilore (2009), Tiringo (2013), Ponsian et al. (2014), Sadiq (2016) found that significant positive relationship between account payable period and profitability by suggesting that longer time a firm takes to pay its obligation the higher

profitability will be since account payable is the cheapest and flexible source of finance. From the above contradictory empirical results the researcher developed the following hypothesis.

H3:- There is significant positive relationship between accounts payable period (APP) and firm's profitability.

The effect of working capital management on profitability can be best explained by cash conversation cycle. Researchers like Padachi (2006), Raheman &Nasr (2007), Arega et al. (2016), Abenet (2016), Samiloglu &Akgun (2016) found significant negative relationship between cash conversion cycle and profitability. The higher profitability firms are those which have shorter cash conversion cycle, it means that minimum amount of cash tied in working capital. On the other hand others like Gill et al.(2010), Tariq et al.(2013), Akoto et al. (2013, Ponsian et al. (2014), Sadiq (2016) found direct relation between cash conversation cycle and profitability. It means that to be profitable a firm should invest higher amount on working capital as on as possible. Based on the above contradictory result the researcher developed the following hypothesis.

H4:- There is significant negative relationship between cash conversion cycle (CCC) and firm's profitability.

The working capital investment policy a firm follows has a strong impact on profitability (Zelalem, 2016). Most researchers like Falope &Ajilore (2009), Onwumere (2012), Javid & Marie Zita (2014), Wahab (2015) found that significant negative relationship between current asset to total asset ratio and profitability. The more a firm follows aggressive working capital investment policy which leads to higher risk and profitability. On the other hand, others like Afza & Nazir (2007), Niresh (2012), Mwangi et al. (2014), Henok (2015), Jeyan (2016) found that significant positive relationship between current asset to total asset ratio and profitability. It means that firms follow less aggressive working capital investment policy results higher profitability. Thus, this study also expecting negative relation between current asset to total asset ratio and profitability and drawn the following hypothesis.

H5:- There is strong negative relationship between current assets to total assets ratio (CATAR) and profitability of firms.

The working capital financing policy a firm follows has a strong impact on profitability (Zelalem, 2016). Researchers like Falope &Ajilore (2009), Niresh (2012), Mwangi et al. (2014), Henok (2015) found that significant positive relationship between current liability to total asset ratio and profitability. It means that the more a firm adapt aggressive working capital financing policy the higher firm's profitability will be since current liability is the cheapest source of finance. On the other hand, others Afza & Nazir (2007), Onwumere (2012), Javid &Marie Zita (2014), Jeyan (2016) found that significant negative relationship between current liability to total asset ratio and profitability. This shows that a firm enhance their profitability by adapting less aggressive working capital financing policy. Therefore, this study expects direct relationship between current liability to total asset ratio with profitability and set the following hypothesis.

H6:-There is significant positive relationship between current liability to total asset ratio (CLTAR) and profitability firms.

1.5. Significance of the study

When the research completed it will have the following importance.

First it will benefit the financial manager and policy makers of those selected wholesale trade firms making decision on working capital component by considering its effect on profitability and liquidity. It also gives some clues for each respective manager about how to create value for a firm and maximize profitability through efficient working capital management. In addition it gives brief information for the shareholders, prospective customers and creditors of a firm regarding profitability in relation to efficient working capital management.

Second even if a lot of research on working capital management on profitability exists in different country of the world. It will contribute on Ethiopian literature by identifying how working capital management component affects the profitability of wholesale trade in Addis Ababa. Besides it will contribute to current knowledge on the performance of firm in trading sector particularly for wholesaler firms.

Finally it will be used as an empirical evidence for other researchers who will conduct research related to this topic and initiate other researcher to put their own contribution on working capital management and its effect on profitability.

1.6. Scope of the study

This study was mainly focus on the impact of working capital management on profitability of 62 selected large tax payers wholesale trade firms found in Addis Ababa for the period of five years (2011-2015) with the total of 310 observations. As per the objective of the research, those firm having operating life five and above years were included in the sample. Five year data enough to analyze the impact of working capital management on profitability because the study used both cross sectional and time series data simultaneously. The reason for selecting five years is to increase the number of sample to be study because limited firms have operating life more than five years. The reason for selecting the industry is no any prior researches exist on relation between working capital management and profitability on wholesale trade firm and the researcher believed that there is a problem of working capital management and it was under-researched in the wholesale trade industry.

Even if many business operations exist in Addis Ababa, this study focuses only on large tax payers wholesale trade firms. The reason for selecting whole sale firms was wholesalers made higher amount of money invested on working capital and less amount of money invested in fixed asset. Wholesalers have important components of working capital management such as account receivable, inventory and account payable. So working capital management efficiency is necessary in this industry and most of prior studies on the relation between working capital management and profitability in different countries were focus on manufacturing business. Because of the above reason wholesalers considered as a best to study relationship between working capital management and profitability.

1.7. Limitation of study

This study is mainly focus on the impact of working capital management on profitability of the selected whole sale trade industry in Addis Ababa. if this the study include retailer and manufacturing firms in addition to wholesale trade firm helps the researcher in order to determine the difference on working capital management across different industry and its impact on profitability of a firm. However, due to shortage of time and money the study was limited to wholesale trade firms.

The study only includes selected wholesale trade firm those found in Addis Ababa and those which are registered in large tax payer's category. Therefore, the study is limited to wholesale trade firms located in Addis Ababa only. In addition the study was depends on secondary data collected from audited financial statement of selected large tax payers wholesale trade firms for a period of 2011-2015 primary data was not included. Finally, this study only focused on the research objective and hypothesis drawn there may be other variables related to working capital management that are not included in this study.

1.8. Organization of the paper

This paper organized in to five chapters. Chapter one includes background of the study, statement of the problem, research objectives and hypothesis, significance of the study, scope and limitation of study and organization of the paper are under this chapter. Chapter two includes literature review in theoretical and empirical evidence on working capital management and profitability and the summery of chapter or gap identified. Chapter three contains the population, sampling technique, research design and data source and collection procedures. It also includes description of variable included in model and data analysis techniques. Chapter four includes data analysis, result and interpretation of the study. Finally, chapter five includes conclusions, recommendations and future direction made by researcher.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter focuses on the literature related to working capital management and how it affects profitability of a firm. It includes the theoretical and empirical evidence on the relation between working capital management and profitability. Finally, it presents conceptual framework and identified knowledge gap the study want to address.

2.1. Nature of working capital

Working capital created during business operation. To do business a firm needs raw material (merchandise for wholesalers and retailers), to acquire those material a firm may not have enough money in hand to pay immediately, to do so a firm use another alternative to purchase raw materials through delay payment a firm promise to pay after some time which is called payable. Those acquired goods may not directly sell to customers immediately, it needs some time period and future is uncertain so a firm should have inventory on ware house. As result the second main components of working capital (inventory) created. Finally, after some time those goods sold to the final customers. A firm sells goods in cash there is no need further process the working capital cycle ends at this stage however, this is unattainable a customer may not willing to pay cash immediately, if a firm doesn't accept credit sales results redaction of sales volume which leads to reduction of profit and wealth of firm. To protect this problem firm offers credit sell to customers. This leads to the formation of third main components of working capital which is account receivable. This endless process continues routinely until the life of business end just like the circulation of blood in our body. The end of one component of working capital will be the case for the formation of other working capital component. All of the above process leads to the formation of what we commonly call it, working capital cycle.

2.1.1. The importance of working capital

Working capital is the life blood of every business concern. It is difficult for any business to continue its operation without adequate level of working capital. A decision made in one

component of working capital has also effect in the other components of working capital and profitability. Poor working management is one of the causes for the failure of many businesses in developed as well as developing countries (Egbide, 2009). For smooth running an enterprise, adequate amount of working capital is very essential. The first primary need of working capital is to providing adequate investment in current asset that helps the firm to meet day to day working capital requirements as to cover its daily expenditures such as payroll, vendor invoices, and inventory purchases. Working capital needed for the firm in order to meet seasonal and some unexpected cash needs such as extensive marketing campaigns or carrying of special job. Working capitals also needed to sustain sales growth and to efficiently utilize fixed assets. If a firm is on the way of growth it needs addition investment on receivable, inventory and payable (Nair, 2011). Generally the adequacy of working capital with the way it managed determines the success and survival of business.

2.1.2. Definition and concept of working capital

The term working capital originated with the old Yankee peddler, who would load up his wagon with goods and then go off on his route to peddle his wares. The merchandise was called working capital because it was what he actually sold, or "turned over," to produce his profits. The wagon and horse were his fixed assets. He generally owned the horse and wagon, so they were financed with "equity" capital, but he borrowed the funds to buy the merchandise. These borrowings were called working capital loans, and they had to be repaid after each trip to demonstrate to the bank that the credit was sound. If the peddler was able to repay the loan, then the bank would make another loan, and banks that followed this procedure were said to be employing "sound banking practices" (Brigham & Houston, 2003). However, with the passage of time the concept of working capital embraced and given many definitions with different scholars while the main concept was related in that working capital deals about current asset and current liability.

The term working capital refers as the names it implies the firm investment in short term asset in order to carry out day today business activities (Ross et al., 2008). Working capital represents the difference between current asset and liability (Kaveri, 1985).

To give clear understanding about working capital, we have to differentiate between two important and related concepts such as gross working capital and net working capital both of them are important to study about working capital management. The term gross working capital shows the total amount of investment in current asset like cash, inventory, and account receivable needed in order to carry out day to day activity of business. It implies that the total amount of current asset employed by a firm. On the other hand, net working capital represents the difference between current asset and current liability of the firm. It indicate that the portion of current asset which financed by long term debt. It can be positive or negative. If it is positive the firm has excess of current asset over current liability on the other hand, if it is negative the firm's short term obligation greater than the total current asset employed by a firm (Paramasivan &Subramanian, 2009).Generally according to fisher's separation theorem; gross working capital and net working capital indicate the firm investment and its source of finance respectively (Brealey et al., 2006).

2.1.3. Types of working capital

Working capital is the amount of capital employed to run day to day business operation. Working capital characterized by seasonal fluctuation, one time the need for working capital will be high in response to sales increase and expansion of economy, in another time the need for working capital will be law due to sales reduction and down of economy. However, all of current asset is not affected similarly some may affected by greater magnitude others may not affected. By considering time as a basis of classification working capital can be categorize as permanent and temporary working capital (Paramasivan & Subramanian, 2009).

Permanent working capital: it also commonly called fixed working capital and it refers to a minimum amount of investment in all current asset which is required at all times to carry out activities of business irrespective of time and sales volume. Even if working capital was short lived asset and usually not exceeding a year. In actual practice business operated more than a year and production does not stop at end of particular accounting year some of the investment in current year transferred to the next year. Such type of working capital continues without seasonal variation and it depends on nature of business and change with the passage of time as the size of business increase is commonly called permanent working capital (Paramasivan &Subramanian, 2009).

Temporary working capital: It is also known as variable working capital. It is the amount of investment in current asset which required in order to meet seasonal variation in business activity and to fulfil some unusual business activity (Paramasivan & Subramanian, 2009). It is not feasible to carry this type of working capital throughout in the year, or year after year, it may be better to use short-term loan rather than long-term sources of capital to satisfy short term working capital needs. In other words different amount of working capital required at different times during the operating year or from year to year. Further temporary working capital can be classified in to seasonal working capital and special working capital, the capital required to meet for seasonal variation and for some infrequent expense such as advertising respectively. In general temporary working capital fluctuates over time with seasons and special needs of firm operations and its source of fund mostly short term maturity (Fabozzi & Peterson 2003).

2.1.4. Determinants of working capital requirements

There are so many factors exist that determine working capital requirement of a firm. There are no specific rules to determine the working capital requirement of the business. Those factors affect different organizations differently and they also vary from time to time with in the same business. For simplicity those factors classified as internal factors and external factors. The following are the list of main factors for working capital requirement with their brief explanation.

Internal factors

Nature and size of the business: The working capital requirements of a business mainly depend on the nature and size of the business. Those firms operated in constriction and trading needs large amount of working capital. However, those firms participate in rendering of public utilities such as transport service needs less amount of working capital. Similarly size also determines working capital needs. Size measured in terms of the scale of operation the firm engaged. A firm with larger scale of operations needs more working capital than a small firm that participates in limited operations.

Firm's credit policy: The credit policy of a firm adapts has an impact on working capital requirement of the business. If the company follows liberal credit policy to collect its credit sales

from its customers the firm needs to have more working capital. On the other hand, the firm follows rigid credit policy and grant credit facilities too few potential customers the firm require less amount of working capital.

Volume of sales: it is one of the factors that determine the working capital requirement of business. The main reason was a firm maintains working capital is in order to carry out operational activities of business such as sales. There is positive relation between sale and working capital requirements. As the volume of sales increase working capital requirement also increase. A firm made more of investment on inventories and receivable in response to increment of sales.

Growth and expansion of business: Working capital requirement of a business increase with growth and expansion business. A growing firm needs additional funds to invest in fixed assets and in current assets in order to fulfil its growing production and sales volume. Thus, a growing firm needs additional funds continuously in order to sustain its growth.

External factors

Business cycle: Most firms experience fluctuations in demand for their products and services at the same time it also affect working capital requirement of business. In the period of economic expansion the working capital requirement will be larger whereas, in the period of recession (decline of economy) the working capital requirement will be reduced.

Taxation policy: The tax policies the government adapt influence the working capital needs. If the government adapts regressive taxation policy*, i.e*. imposing heavy tax burdens on business firms the amount of profit for distribution and for reinvestment in business will be reduced. Because of this the firm should borrows additional funds to meet their increased working capital needs. However, when a firm adapts relaxed taxation policy the need for working capital will be reduced. Thus, a typical financial manager of a firm should decide on level of working capital, by considering the above internal and external factors.

2.2. Working capital management

Working capital management refers to managing of current assets and current liabilities which consists of optimizing the level of current assets in partial equilibrium context. Working capital management involves management of different components of working capital like cash,

accounts receivable, inventories and payables. In other terms administration of all components of working capital on optimal way to achieve goal of the firm (Mawhiraju, 1999).

Working capital management is an art of planning, organizing and controlling the components of working capital like cash, bank balance, inventory, receivables, payables, overdraft and short-term loans (Paramasivan & Subramanian, 2009). Working capital management mainly concerned with the problems that arise in attempting to manage current asset, current liabilities and the enter link that exist between them and their composition (Khan and Jain, 2007).

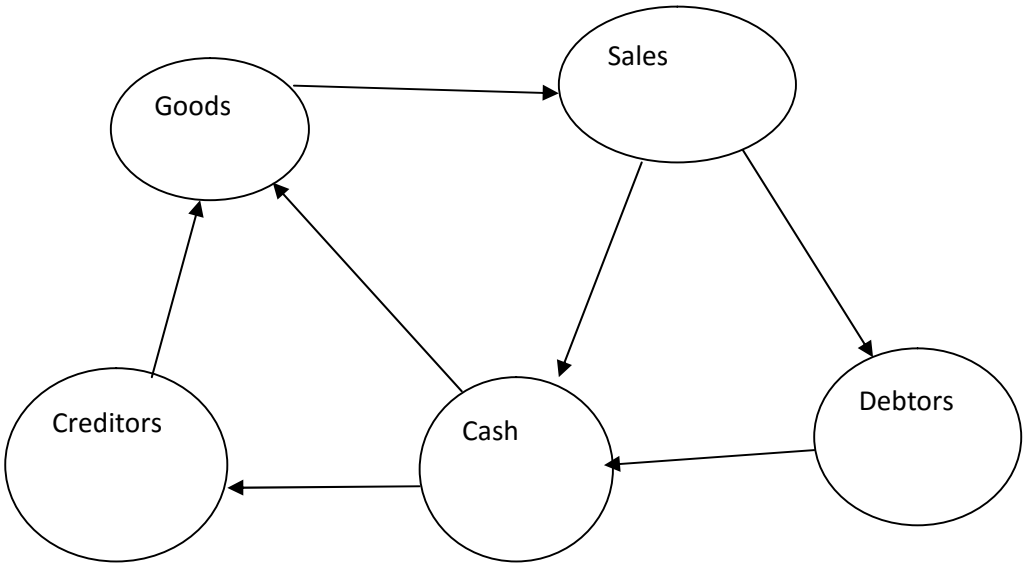
Working capital management means making decision related to how mach a firm should invest on current asset for optimal decision making, on which components of working capital a firm should invest and how a firm raise funds in order to finance current assets. In other words, working capital management deals with the relationship between a firm short term assets and short term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations by achieving its solvency for immediate unexpected cash needs and for its long ran success. Basically even if many definitions exist about working capital management, however the basic concept is similar in that all describe about making optimal decision regarding to current asset and current liability and establish best mix between them.

2.2.1. Working Capital Cycle

Working capital cycle is also known as operating cycle. Working capital cycle measure the length of time between actual cash expenditure for purchase of products and cash collection from sales of products. In other terms it is combination of various components of working capital periods. According to Arnold (2008) operating cycle refers to the length of the time between from procurements of inventory until cash from receivables is accepted.

According to Khan and Jain (2007) operating cycle can be considered as the blood vessel for working capital management. There is continuous follow of funds to purchase merchandise inventory until the goods are sold to final customers. The following diagram shows the various components of working capital cycle typically for those participate on merchandise business.

Figure 2.1Working capital cycle



Source**:** author's computation

The above working capital cycle shows that the money invested in various components of working capital follows continuously. Therefore, working capital cycle represents the continuous follows of funds in various components of working capital. Machiraju (1999), suggest that conversion cycle captures the fact that different components of working capital have different life expectancies and are transformed to liquidity flows in different ways. The imbalance between cash inflows and outflows indicate that there is a need of investment in current assets. Cash conversion cycle used as an indicator to determine the net cash conversion and the amount to be financed by working capital.

2.2.2. Cash management

Cash management is becoming ever more sophisticated in the global and electronic age of the 1990s as financial managers try to squeeze the last dollar of profit out of their cash management strategies (Block &Hirt, 1992). Cash is more than one components of working capital. It used as a medium of exchange, it create the linkage between all financial aspect of the firm. Cash management especially crate a linkage between short term and long term financing decision, it represent decision on the investment both on long term asset and short term asset. So that cash

management play magnificent role for any organization whether it is large or small (Mclaney, 2000). Meyer et al. (1995) describe that cash and marketable securities are the most liquid of all asset of the firm.

Cash is the most important components of current asset for day to day activities of the business. It is the basic element which insure that the business run its activity continuously and to answer some unexpected expenditure in the future. Cash includes money in hand and money deposited in the bank (Copeland et al., 2005). In fact keeping money in hand has an opportunity cost if that money invested in marketable securities which earn interest however it is necessary to hold cash in hand in order to fulfil cash needs for day to ay operation of business and to pay its obligation timely since other assets like marketable securities requires some time and has transaction cost.

The two main sources of cash are account payable and equity. According to Pandey (1993) describe that account payable is trade credit arise when customers purchase goods from supplier in credit. It is common in actual practice of business purchase the goods without immediate payment of cash. Equity represent owners claim on the business entity. Pandey (1993) argues that a major responsibility of any financial manager is to maintain optimal cash position by avoiding inadequate and excess level of cash in hand. Shortage cash results stoppage of business activities where as holding excess level of cash in hand results reduction of profitability because of holding idle cash.

Cash management is concerned with the managing of cash inflows outflows of the firm and monitoring cash balances held by the firm at a point of time receipt and payment of transaction. Thus, the main aim of cash management is maintaining adequate level of cash in hand by avoiding extreme excess and inadequate level of cash holding (Pandey, (1993). Gitman et al., (1979) explain that the formulation of cash management strategy should considering firm's financial condition and its objective.

2.2.2. Accounts receivables management

Sales on credit are the most prominent means of competition of the modern business in today's era. In order to increase sales and to protect from competitors firms offer credit sales. Trade receivable created when firm sales goods on one time and collect that amount in some future date. Firms record those credit sales as receivable until it collected in some future time. In other

terms receivable means claims against customers for future receipt of money the value depends upon the volume of credit sales and the efficiency of credit policy (Meyer et al., 1995).

Joshi (2000) said that the main objective of investment in receivable is to increase profit by expanding sales to attract new customers and by keeping the existing customers, increasing the market share of business and to be in better position than competitors. A business should have a rational for collection of receivables. Collection policy may be strict policy which ensures better collection, fewer instances of bad debt expense but high collection costs. It also leads to reduction of sales and anger the customers and some of them may go to other bettor competitors. On the other hand, a relatively liberal collection policy will have the opposite effect of strict credit collection policy (Joshi, 2000).

Meyer et al (1995) observe that a firm's financial managers must consider a number of major factors that has effect on the level of receivables such as credit standards, credit terms and collection effort in order to establish optimal credit policy. Credit standards are the criteria a company uses to select weather financial position of applicants is good to receive credit and made decision related to which of applicant customers should be accepted credit sale and how much should be the credit accepted. The process of setting credit standards allows the firms to select solvent customers from those insolvent. To measure the quality of credit offered by looking in different ways such as the length of time customers takes to pay their obligation.

The literature related to credit policy is quite extensive. Srinivasan (1999) explain that it is essential that firm's credit management set out with care and properly the credit policy and should subordinate to the general interest of the organization. The credit policy must be congruence to the firms overall objective and marketing policy and should be the subject of general objective.

Firms can measure how well receivable managed using aging schedule and average collection period. Aging Schedule shows how long accounts receivable have been waiting outstanding. To do aging analysis, a firm's account receivables are classified into different categories based on number of days they are past due after sales such as 0-10, 11-30, 31 - 45, 46 -60, over 60 days and so on (Brigham and Houston, 2003).The schedule can represent the receivables according to how many there are in each age group or according to the total dollars the receivables represent in each age group. Hence, the higher the number of accounts in the shortest term groups, the

faster the collection or efforts is made (Fabozzi and Peterson, 2003). Generally to measure the overall effectiveness of credit management financial ratio specifically account receivable period was used which shows the average length of time is taken to collect credit sales.

2.2.3. Inventory management

The word 'inventory' has been defined in many ways. Larson (1990) defined as inventory is a merchandise held for sale by a firm. According to Ballon (2004) express that the term inventory refers to the stocks of the product of a firm is offering for sale and the components that make up the product inventory are stores of goods and stocks. This includes raw materials, work-in-process and finished goods. Inventory is one of the most important and constitutes the largest portion of the total current assets of a business.

There are various list of goods make up inventory. However, according to Joshi (2000) the items that make up inventory categorized in to three major parts. These are raw materials, work in progress and finished goods. However in merchandise business there is one category of inventory. The amount of inventory held is differing between industries and farms, and the way of the management of particular firm. Wholesale and retail industry need higher amount of inventory held in order to sale more and to fulfil customer needs (Louw, 2014).

According to Paramasivan & Subramanian (2009) the main objective of inventory management was to establish optimal level of inventory by avoiding neither too inadequate that harms production adversely nor too be excess which raise the cost of inventory, to reduce the cost of holding inventory to lowest cost as on as possible and to run the production process smoothly. When making decisions on inventory, respective management should make decision by considering different cost of inventory such as inventory holding cost, ordering and receiving costs and the costs that are incurred if the firm faces shortage of inventory.

Managing and optimizing inventory is one of the difficult tasks for firms which require compromising between caring cost and shortage cost in which both of them have their own disadvantage. Thus, firms make optimal investment decision on inventory by avoiding two extreme points (Brealey et al., 2006). In Oder to do this a firm should have good inventory system. Inventory control refers to systems which ensure supply of required quantity and quality of inventories at the required time and at the same time it prevent unnecessary investment in inventories. It enables a firm to coordinate purchasing, store keeping and selling departments.

This helps respective department works together and it enables to protect over stocking and under stocking (Wild, 2002). A firm should monitor and evaluate inventory at appropriate time to know existing situation about inventory. One of the popular tools used to measure inventory is Inventory turnover ratio which is in days and tell that how many times inventory turned over in to sales during a year and evaluate the efficiency of a firm in managing inventory.

Clodfelter (2003) suggest that good inventory control system crate proper coordination between inventory department and sales department. Without effective controlling system inventory in ware house will be excess or inadequate. Merchandise control system allows buyers in order to identify best sellers and then the re- orders will be placed to increase sales to sore department.

Just in time approach is most widely used in order to manage inventory. Just in time approach it is a strategy used for efficiently management of inventory and helps to reduce the amount of inventory to minimum level. The aims of this strategy is to avoid unnecessary costs due to holding inventory by make the orders of good deliver just in time when it is required (Brealey and Myers, 1996). Management goal must be only maintain inventory that is necessary to fulfil customer needs and should manage inventory effectively.

2.2.4. Accounts payable management

Account payable is one of the components of working capital and a main source for short term finance. It created when a firm purchases goods with credit or no cash payment immediately. Account payable is the largest category of short-term source of finance, representing about 40 percent of the current liabilities of the average nonfinancial corporation (Brigham and Houston, 2003). Accounts payable it is one of the cheapest and flexible source of finance.

Firms should have generated enough cash to pay short term debt in addition to good account payable management. If a firm is unable to meet its short term liability on agreed date, it will affects the liquidity position of a firm and it creates problem for a firm unable to get funds by borrowing money in next time. A larger value of account payable represent the firm wait a longer time to pay its credit purchase on the other hand, the smaller the value represent that a firm takes short time to pay its credit purchase. According to Mathuva (2009) a longer time takes to pay its credit purchase the more the firm profitability because it is one of cheapest and flexible source of finance. This relationship also supported by other researcher like (Raheman & Nasr,

2007; Tirngo 2013). However, it might result redaction profitability if there is cash discount for early payment (Ng et al., 1999). In order to make optimal decision on account payable monitoring periodically has significant role. One of the popular measure is used to evaluate account payable of a firm is account payable period and it shows that the average length of time a firm takes in order to pay its credit purchase.

To sum up, short period of account payable means that a firm pays its obligation quickly so as take the advantage purchase discount. On the contrary, the longer period of account payable means that a firm wait long time to pay its obligation.

2.2.5. The Cash conversion cycle

Cash conversion cycle is a length of time between payment for the purchase of goods and collection of cash from sales of produced goods. It is the average length of time cash waiting invested in current asset (Brigham & Houston, 2003). The cash conversion cycle represents the interaction between current asset and current liability and the flow of cash within a company. It can be used to determine the amount of cash needed for any sales level (Watson & Head, 2007)

Cash conversion cycle is the most popular and compressive measure of working capital since it consists the three important periods of working capital together such as receivables period, inventory period and payable period, and including current asset and current liability together(Gill et al.,2010). Cash conversion cycle covers the time difference between actual purchase of goods and cash inflows from sales of goods. Thus, cash conversion cycle represent the length of time required to replace cash out lays for purchase of goods. It calculated by adding both inventory period and receivable period and subtract payable period. The longer cash conversion cycle indicate that a firm made that larger investment in current asset and it occur when both the longer inventory and receivable period and the period of payable is shorter.

According to Brigham and Houston (2003) the shorter cash conversion cycle leads to higher profitability because the shorter cash conversion cycle results higher present value of cash follows and decreases the need of expensive external financing. There is inverse relationship exists between cash conversion cycle and profitability. The longer the cycle the lower the profitability will be. Thus, in order to increase profitability effort should be taken to shorten the cycle as much as possible without affecting production process.

Cash conversion cycle is one of the most common and compressive measure working capital efficiency (Lazaridis &Tryfonidis, 2006; Shin &Soenen, 1998; Charitou et al., 2012). In addition it also used to measure the type of working capital policy firms follow and to evaluate the strength and weakness of working capital policy a firm adapts. The longer cash conversion cycle indicate that a firm working capital policy approaches to conservative. On the other hand, the shorter the cycle approaches to aggressive working capital policy (Arnold, 2008). The formula used to calculate cash conversation cycle as follows.

CCC = Account receivable period + Inventory holding period –Account payable period

2.3. Types of working capital management policies

Working capital policy can be defined as guide line or strategy used by a firm to make decision related to the amount of investment in current asset and the way used by a firm to finance its current asset. In other words it represents a firm make decision on the amount of current asset, the level on each components of current asset and the way to raise source of finance used by a firm, called working capital policy (Watson & Head, 2007).

Actually there are no uniform working capital policies adapted by all firms. It depends on the nature of business, the working capital requirement and the attitudes of firms towards risk and profitability. Working capital policy further categorized in to working capital investment policy and financing policy which responsible for the level of investment in working capital and how a firm raised source of funds for investment respectively. According to Watson & Head (2007) there are three alternative of working capital policy exists to wards investment and financing decision. These are; aggressive policy, moderate policy and conservative policy each of them have their own philosophy towards the amount of current asset and its source of finance. The more aggressive the working capital policy the greater investment in current asset and the more a firm depends on short term source of funds to finance its current asset where as the more conservative policy the lower investment in current and the more a firms depends on long term loan to finance its current asset. Moderate policy falls between conservative and aggressive approaches.

Aggressive working capital: it is rigid approaches of working capital management. It is depends on minimum amount of investment on inventory and receivable for given level of sale and use short term debt to finance investment on current asset. Under this approach current asset turn

over frequently to sales to sustain its sales volume and profit. The more a firm follows aggressive policy, the higher its return and final the value of firm because fewer amounts of cash invested in current asset those idle cash will invested in other asset like fixed asset which significantly increase profitability and it depends on cheapest and flexible source of source of finance. However, its risk of solvency will be higher since less investment on current asset result reduction of sales and depends on short term source of funds have a problem interest rate fluctuation and higher amount of flotation cost (Watson & Head, 2007).

Conservative working capital policy: it is flexible approaches of working capital and employs relatively large amount of cash, holding large amount inventory and follow liberal credit policy and offer more credit sales to customers to increase sales, and used long term debt to finance its investment on current asset. Its asset turnover ratio is low (Brigham & Houston, 2003).

The more firms adapts conservative working capital policy, the lower the risk of firm because there is enough cash in hand in order to meet short term needs and some unplanned cash needs, there is no shortage of inventory during production helps in order to meet its day to day obligation, sales increase as result of liberal credit policy and used long term debt to raise funds no risk of interest rate fluctuation and flotation cost. On the other hand, it reduce profitability of firm, since large investment in current asset reduce the present value of cash follows and depends on long term debt which is expensive source of funds (Paramasivan & Subramanian, 2009).

Moderate working capital policy: it lies between aggressive and conservative working capital policy by avoiding two extremes. It is a type of policy try to meet optimal investment on level of current asset by avoiding excess and inadequate level. Matching maturities of asset and liability by using long term source of fund in order to finance permanent working capital components and use short term debt to finance temporary working capital component (Brigham & Houston, 2003).

2.4. Relationship between profitability and liquidity

Every decision on working capital management will affect either profitability or liquidity. Financial manager of every firms face the dilemma between profitability and liquidity when making decision in any area of corporate finance (Eljelly, 2004). Profitability means the ability of firms to raise anticipated return and maximize shareholders wealth whereas liquidity shows the ability of business to meet day to day obligation or having of sufficient cash to pay its debts and ability to satisfy unexpected cash needs. Profitability and liquidity are the two primary objective of any financial manager but they contradictory each other. When profitability of firms increase its liquidity decease, when profitability decease liquidity increase (Padachi, 2006).

Financial managers always face confusion between short term investment and long term investment. When firm invest in long term asset its profitability will increase because long term asset has higher present value of future cash follows however the risk of firm also increase since long term asset are non-liquid asset and it needs more time to covert in to cash. On the other hand, if a firm invest in short term investment like current asset liquidity problem will be solved the higher firms invest in short term asset the more a firm's ability to meet business day to day needs however it results redaction of profitability (Niresh, 2012).

Walker (1964) describe that when firm builds large amounts of current asset it could satisfy liquidity objective however, the problem was current asset has less returns. If a firm has large current asset such as cash, stocks and receivable it will face less risks however, its return also reduced holding to many current asset on hand has an opportunity cost if such fund invested in other assets, carrying large inventory has high storage cost and offering large credit sales leads to unnecessary bad debt expense. On the other hand, holding to few current assets leads to higher profitability however, its liquidity position will be week. In general to be solvent and sustain its operation any financial manger making decision on working capital management should avoiding the two extreme positions and try to make optimal decisions by balancing the two opposite objectives because business will not be continues its operation without the fulfilment of the two objectives(Arnold, 2008).Thus, one needs the other.

2.5. Measurement of liquidity and profitability

Ratio analysis: it is one of commonly used method to evaluate financial performance of business by using financial statement. As the name indicate ratio means mathematical relationship between two numbers. There are various ratios analysis exists in field of financial management. This study includes profitability ratio and liquidity ratio from various financial ratios because all other ratios are less relevant to this study.

Profitability ratio: used to measure how efficiently a firm utilizes its asset in generating profit and the ability of managers of a company in managing its operation (Ross et al., 2008).

Net profit margin (NPM): this ratio calculated by dividing net income over sales it also called profit margin on sales and measures profit generated from each dollar sales. The higher profit margin ratio, the better firm's financial performance will be.

$$\text{NPM}=\frac{\text{Net incame}}{\text{Sales}}*100$$

Gross operating profit (GOP): this ratio used to evaluate how a firms efficiently utilizing its operating assets. This ratio can be calculated by dividing gross profit over operating asset.

$$\text{GOP}=\frac{\text{Sales}-\text{COGS}}{\text{Total asset}-\text{Financial asset}}$$

Return on asset (ROA): this ratio masseurs how efficiently firms utilize its asset to generate a given level of income. It principally measures the amount of profit generated by utilizing a given level of asset. It can be calculated dividing net income by total asset employed. The higher the value of this ratio the better firms utilize its asset.

$$\text{ROA}=\frac{Net\ incame}{total\ asset}$$

Liquidity ratio: This ratio measures a company's ability to meet its short term obligations at payment date and it measures the degree of convertibility of current assets in to cash (Brealey et al., 2006). The two commonly used liquidity measures presented and discussed as follows.

Current ratio (CR): is one of the most known and frequently used measurers of short term solvency. It measures the extent in which current liability covered by those assets that converted

in to cash in near future date and calculated by dividing current asset over current liability. The higher this ratio, the greater firm's ability to meet its sort term obligation will be (Horne &Wachowicz, 2009).

$$CR = \frac{Currentasset}{Currentliablity}$$

Quick ratio (QR): it also known as acid test ratio and measures the ability of firms to meet its current obligation with its most liquid asset (quick asset). This ratio is similar with current ratio except the only difference excludes inventory which is the least liquid part of current asset (Horne &Wachowicz, 2009).

$$QR = \frac{\text{Current asset} - \text{Inventory}}{\text{Current liablitty}}$$

Debt ratio: which also known as leverage ratio is one part of financial ratio which is used to measure long term solvency. It measures the extent of debt used by firm as source of finance relative to its asset and it measure over all ability of firm to pay its obligation. The higher this ratio, the grater firms vulnerable to financial risk (Ross et al., 2008)

$$\text{Debt ratio} = \frac{\text{Total debt}}{\text{Total asset}}$$

2.6. Review of prior empirical studies

Afza and Nazir (2007) studied the relationship between working capital investment and financing policy, profitability and risk on 208 public limited companies listed at Karachi Stock Exchange (KSE) from 17 different industrial sectors for a period of 1998 to 2005.They used cross-sectional regression models to study aggressiveness of working capital policy, profitability and risk. They found a negative relationship between profitability of firms which was measured by ROA, ROE and degree of aggressiveness of working capital investment policy measured by current asset over total asset and financing policy which was measured by current liability over total asset. The result showed that, the greater firm's follows aggressive working capital policy leads to lower profitability. In addition to this they found that there was no significant relationship between working capital and risk level.

Raheman and Nasr (2007) studied the relationship between different variables of working capital management such as average collection period, inventory turnover in days, average payment period, cash conversion cycle and current ratio on the net operating profitability of Pakistan firms. In addition to independent variable they used debt ratio, size of the firm and financial assets to total assets ratio as control variables. The study used sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of six years from 1999 – 2004 and the result indicated that there were significant negative relationship between measures of working capital management and profitability. It means that the longer cash conversion cycle, the lower will be its profitability and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. They also found that there was significant negative relationship between profitability and liquidity.

Mathuva (2010) investigate the impact of working capital management components on profitability on sample of 30 firms listed on Nairobi stock exchange for period of 6 years between1993 -1998. He used Pearson and Spearman's correlations to measure the degree of association between variable and he used fixed effect regression model to analyze data. He found that there was highly significant negative relationship between receivable collection period and profitability; there was highly significant positive relationship between inventory conversion period and profitability; there was highly significant positive relationship between average payment period and profitability. This showed that the more profitability firms were the lower it takes to collect its credit sales, those who hold high inventory level and the longer it takes to pay its credit purchase.

Charitou et al. (2010) examined the effects of working capital management on firm's financial performance in an emerging market firms listed in the Cyprus Stock Exchange for the period 1998-2007 and used multivariate regression analysis. They found that there were significant negative relationships between cash conversion cycle, days in inventory, days in sales outstanding and creditor's payment period with profitability of firm.

Gill et al. (2010) had studied the relationship between working capital management and profitability on sample of 88 American firms listed on New York Stock Exchange for a period of 3 years from 2005 to 2007. They used Pearson correlations and weighted least square model to measure the relationship between variable and to analyze the cause and effect between variables

respectively. They found that significant positive relationship between cash conversion cycle and profitability which measured by gross operating profit and significant negative relationship between receivable collection period and profitability.

Ali and Ali (2012) investigated does working capital management really affect profitability of Pakistan firms for the period 2003 to 2008 years. The study selected 15 companies from the balance sheet analysis report of State Bank of Pakistan. The study adopted OLS regression model and data was analyzed using SPSS. The results of study showed that working capital management had significant positive impacts on firm's profitability. It means that efficient management of working capital leads to better profitability.

Niresh (2012) examined the relationship between working capital management and financial performance of listed manufacturing firms in Sri Lanka. He selected a sample of 30 manufacturing firms listed on the Colombo stock exchange and data was collected from annual report for a period of 2008 to 2011. The dependant variable profitability was measured by return on assets and return on equity. The study used cash conversion cycle, current assets to total assets and current liabilities to total assets as measures of working capital management. The study used correlation and regression analysis. He found that there was no significant relationship between cash conversion cycle and profitability and insignificant positive relationship between current assets to total assets and profitability measures. Finally, he found that manufacturing firms in sri lanka follows conservative working capital policy.

Akoto et al. (2013) studied the correlation between working capital management and profitability of listed manufacturing firms in Ghana for a period of 2005 to 2009. The study used audited annual report collected from all 13 listed manufacturing firms in Ghana. The study used return for equity to measure profitability and cash conversion cycle, account receivable period, size and current asset ratio as a measure of working capital management. The result of the study showed that there was significant positive relationship between cash conversion cycle, current asset, size with profitability and significant negative relationship between account receivable days and profitability. They recommended that, to create value for share holders managers should minimizing the number of days it takes to collect receivable as on as possible.

Ponsian et al. (2014) examined the effect of working capital management on company profitability of three manufacturing companies listed on the Dar es Salaam Stock for a period of

ten years (2002 to 2012). They used Pearson's correlation and ordinary least square regression analysis to analyze data. They found that there were positive relationship between cash conversion cycle and average payment period with profitability; there were negative relationship between inventory turnover in days, average collection period and liquidity. Thus, the result implied that, the higher profitability of firms was; the longer cash conversion cycle, the longer a firm takes to pay its creditors, the sorter time takes to collect receivable and the lower inventory level on warehouse.

Mwangi et al. (2014) had studied the impact of working capital management on performance of Non- Financial Companies in Kenya for the period 2006 to 2012 on selected 42 non-financial companies listed in the Nairobi Securities Exchange. They used panel data models and used secondary data collected from annual reports of firms. Financing policy which was measured by current liability divided by total asset and investing policy which was measured by current asset divided by total asset were used as independent variable and firm's performance measured by ROA, ROE as dependant variable. The result showed that aggressive financing policy had a significant positive impact on firm's performance and also conservative investing policy had significant positive effect on firm's performance. It means that, firms following conservative investing working capital policy and aggressive financing policy leads to higher profitability.

Wahab et al. (2015) had studied how working capital management affects firm's performance on22 Sabah's listed firms for the period of 2000 to 2012. They used cash conversion cycle, size, current ratio, current assets to total assets, current liability to total assets and debt ratio as independent variable and profitability as dependant variable. The data was analyzed by Pearson's correlation and pooled regression approach. The study found a significant negative correlation between cash conversion cycle and profitability while current ratio, current asset to total asset, current liability to total asset were insignificant. Further they found size and debt ratio had prominent role in firm's performance.

Amit Das (2015) examined the association between working capital management and profitability of pharmaceutical companies in India for a period of 2003 to 2013. The study was depend on secondary data collected from centre for monitoring Indian economy database and descriptive statistics, correlation statistics and multiple regression analysis were used during

investigation process. The result showed that no significance relation exists between working capital management and profitability.

Ahmed et al. (2016) examined the link between working capital management and profitability in case of Pharmaceutical Sector in Pakistan for a period of 2005-2012. The study used secondary data which obtained from annual report of 7 pharmaceutical companies quoted in Karachi Stock Exchange. Pearson's correlation and multiple regressions were employed for analysis. Profitability measured by ROI, ROE and net working capital, current ratio, quick ratio, operating cycle and CCC were used as independent variables. The result of this study showed significant negative relationship between working capital and profitability. He concludes that efficient management of working capital enhances profitability of firm.

Prior Studies on working capital management and profitability in context of Ethiopia

Tewodros (2010) examined the impact of working capital policy on firm's profitability by using audited financial statements of a sample of 11 manufacturing private limited companies in Tigray region, Ethiopia, for the period of 2005 to 2009 and the study used correlation and pooled panel data regression models for analysis. The study used return on assets, return on equity and operating profit margin as profitability measure. Accounts receivable period, cash conversion cycle, current assets to total assets ratio, inventory holding period and accounts payable period were used to measure working capital investment policy, working capital financing policy measured by current liabilities to total assets ratio. The result showed that there was significant negative relationship between cash conversion cycle and profitability. There was no significant relationship between current assets to total assets ratio and profitability. In addition negative relationships between liquidity and profitability measures have been found.

Mulualem (2011) had conducted to study the correlation between working capital management and firm's profitability. He selected sample of 13 manufacturing companies by using stratified sampling for the period of five years (2005-2009). The study used quantitative approach using Pearson's correlation and OLS regression analysis to analyze collected data. The result of the study found that there was significant negative relationship working capital management and

profitability. In addition to this he found that significant positive relationship between size and profitability, the study also found negative but not significant relationship between debts used and firms profitability.

Tiringo (2013) investigate impact of working capital management on profitability of micro and small enterprises in case of Bahir Dar city administration using a sample of 67 micro and small enterprises. The study used financial statements of the enterprises obtained from a sample of 67 micro and small enterprises for year 2013. The variables included in this study were number of days accounts receivable, number of days inventory, number of day's accounts payable, cash conversion cycle as independent variable and return on asset as dependant variable. The data was analyzed by Pearson's correlation and OLS regression with a cross sectional analysis. The result of study showed that there was significant negative relationship between number of days accounts receivable, number of days inventory and cash conversion cycle with profitability. On the other hand, there was significant positive association between number of day's accounts payable and profitability.

Henok (2015) had studied in order to investigate the correlation between working capital management and profitability on manufacturing companies in Addis Ababa, Ethiopia for the period of 2010 to 2014. The study used descriptive statistics, correlation analyses, and fixed effect regression to analyze data specifically audited financial statements. The study used accounts receivable period, inventory holding period and accounts payable period as independent working capital investment policy variables, cash conversion cycle and current assets to total assets ratio were used as overall measure of working capital investment policy variables and current liabilities to total assets ratio is used as measure of working capital financing policy. The study found that there were significant positive correlation between current assets to total assets ratio and current liabilities to total assets ratio with profitability. There was significant negative correlation between numbers of days account receivable and inventory conversion period with profitability. The study also found significant negative association between cash conversion cycle with profitability and positive but not significant relationship between account payables days with profitability.

Niman (2015) carried out a study on effect of working capital management on firm's profitability in case of selected manufacturing companies in Somalia regional state, Ethiopia for a period of

2009-2014. The study used audited financial statement obtained from 25 firm's selected based on stratified sampling techniques and the collected data was analyzed by using Pearson's correlation and pooled panel data regression models. Accounts receivable days, inventory holding days, accounts payable days and cash conversion cycle were used as independent variables and gross operating profit used as proxy to measure profit of firm .The results of this study indicate that there was significant negative relationship between profitability and working capital management. This implies that to increase profitability of firm, each respective manager of a company keep components of working capital management include cash conversion cycle to possible minimum level.

Arega et al. (2016) investigated the impact of working capital management on profitability of food complex manufacturing firms in Addis Ababa, Ethiopia for a period of 2009 to 2013. The study used annual financial statement which obtained from a purposively selected 10 food complex manufacturing firms. Descriptive statistics, Pearson correlation and multiple regression analysis were used for investigation process. They used inventory turnover period, account receivable collection period, days payables outstanding, cash conversion cycle, current ratio and quick assets ratio to measure efficiency of working capital management and used return on assets to measure profitability. The study found that significant negative relation between average days in inventory, average days payable and cash conversion cycle with profitability and negative relation between receivable collection periods and profitability. They also found that there was positive but not significant relation exists between current ratio and quick asset ratio with profitability. Finally they conclude that firms increase their profitability by shortening cash conversion cycle, reducing the level of inventory to possible minimum level, by reducing the time taken to collect credit sales and the time taken to pay obligation.

Abenet (2016) studied the impact of working capital management on firm's profitability on manufacturing companies in eastern, Ethiopia for a period of 2010 to 2014. The study used secondary data which collected from a sample of 30 firms with total observation 150. The data had been analyzed by using descriptive statistics, Pearson's correlation and panel data regression analysis. The study used number of days accounts receivable, number of days inventory, number of days accounts payable and cash conversion cycle as an independent variable and return on asset as a dependant variable. The result of this study showed that significant negative relation between cash conversion cycle, accounts receivable days and accounts payable days with return

on asset and significant positive relation between number of days in inventory and return on asset. Finally the study conclude that firm's increase its profitability by shortening cash conversion cycle up to minimum level as soon as possible.

Prior studies on wholesale and retail industry from abroad

Louw (2014) examined the relation between working capital management on profitability of South Africa retail firms listed on Johannesburg securities exchange for a period of nine years (2004-2012). A sample of 18 retail companies selected. The dependent variable, firm's profitability were measured by four variable namely return on asset, return on equity, gross profit margin and economic value added. The study used cash conversion cycle, average age of receivable, average age of payable and average age of inventory as independent variable. The result showed that reducing cash conversion cycle, average age of receivable, average age of inventory can help a firm to gain more profits.

Kinuthia (2015) examined the relationship between working capital management and financial performance of retail supermarkets in Nairobi County, Kenya. A sample of 8 large supermarkets was selected for five years from 2010 and 2014.The study used a descriptive survey design and secondary data collected from annual audited financial statements of the firms.The dependent variable, firm's profitability was measured by return on asset and independent variable working capital management were measured by days of sales outstanding, days of sales in inventory, days of payables outstanding, leverage and size of the firm. The analysis was takes place by using correlation analysis and regression analysis. The study recommends that retail firms should effectively manage their working capital to gain more profit.

Chuansim (2016) investigate does working capital management influence the performance of wholesale and property industry in Malaysia. A sample of 204 firms in wholesale & retail sector and property sector listed in Bursa Malaysia were selected for a period of 10 years from 2002 to 2011. The analysis was carried out by using regression analysis. The dependent variable, firm's profitability were measured by two variable namely return on asset and Tobin's Q (proxy to measure the firm's market value) where as the independent variable working capital management measured by current assets to total assets ratio (CATAR) and current liabilities to total assets ratio (CLTAR) with three control variables namely firm size , sales growth

and financial leverage. The result of the study indicate that CATAR and size had significant positive impact on the firm's Profitability.

Mbawni et al. (2016) examined the effect of working capital management on profitability of petroleum retail firms in Ghana over a six year period (2008-2013). They selected sample of 5 firms and used secondary data taken from annual report which was analyzed by descriptive analysis, Pearson correlation and panel data analysis. The result of this study indicate that average days payable was the only variable had negative significant impact on profitability, others cash conversion cycle and average days receivable have positive relation with profitability but insignificant, and average days inventory had negative relation with profitability but insignificant.

Hassan and Ibrahim (2016) had studied on the effects of working capital management on firm profitability in the merchandise firms in Mogadishu, Somalia. The study used survey research design in order to collect data. The study used average collection period, inventory management, cash conversion cycle and average payment period as an independent variable. The study found that working capital management components were found significantly and positively influence firm profitability of merchandise.

2.7. Summary of the chapter and knowledge gap identified

In general what we understand from theoretical and empirical part of the study working capital management plays great role for long lasting success for any organization particularly it is very essential for wholesale retail firms for their smooth day to day operation and to generate enough profit for their long term success was undeniable fact and proofed by scholars like (Louw (2014); Garg & Gumbochuma (2015). Every business requires working capital to carry out day to day business operation weather business is large or small. Without working capital is difficult for firms to undertake day to day activities of business. Efficient management of working capital has so many advantages and it was the key for success for any organization. Inefficient management of working capital leads to failure even leads to bankruptcy and one of the causes for the failure of many organizations in the past was due to inefficient management of working capital (Smith, 1973; Egbide, 2009). There were many study exist on the relation between working capital management and profitability in different part of the world however, the results of the study contradict one with the other and lack consistent across different countries of the world and

industry to be studied. The difference was mainly based on the relation between working capital management and profitability, the sign of relationship and the extent of relationship between working capital management components with profitability.

As mentioned in the above empirical study part Sharma& Kumar (2011), Ali& Ali (2012) found that there was significant positive association between working capital management and profitability. Keeping higher amount of working capital leads to better firm's profitability. This funding also supported byGill et al. (2010), Ponsian et al. (2014), Akoto et al. (2013) found that the longer cash conversion cycle results higher profitability. On the other hand, other researcher like Raheman & Nasr (2007), Arshad &Gondal, (2013) found that significant negative correlation between cash conversion cycle and profitability, the shorter the cycle result higher profitability and supported by many scholars such as Niman (2015) and Ahmed et al. (2016) found that significant negative relationship between profitability and working capital management. Some others likeYadav & Kumar (2014), Bjorkman & Hillergren (2014), Amit Das (2015) found no significance relation exist between working capital management and profitability.

Mathuva (2010) found that significant inverse relationship between average collection period and profitability and significant positive relationship between inventory conversion period and average payment period with profitability. Ponsian et al. (2014) found that positive relationship between cash conversion cycle, average payment period and profitability and negative relationship between inventories holding days, average receivable period and profitability.

Mbawni et al. (2016) found that average days payable was the only variable had negative significant impact on profitability; others CCC, IHP and ARP were insignificant. Charitou et al. (2010) found that there were significant negative relationships between cash conversion cycle, days in inventory, days sales outstanding and creditor's payment period and profitability of firm. From this we can understand that there was lack of consensus on the impact of working capital management and its components on profitability and still it is open for further investigation and this study try to minimize the above mentioned gap by including main working capital management variable and by adding working capital policy variables.

There had been studies conducted in different countries on the impact of working capital management on profitability of merchandise business specifically in wholesale and retail trade

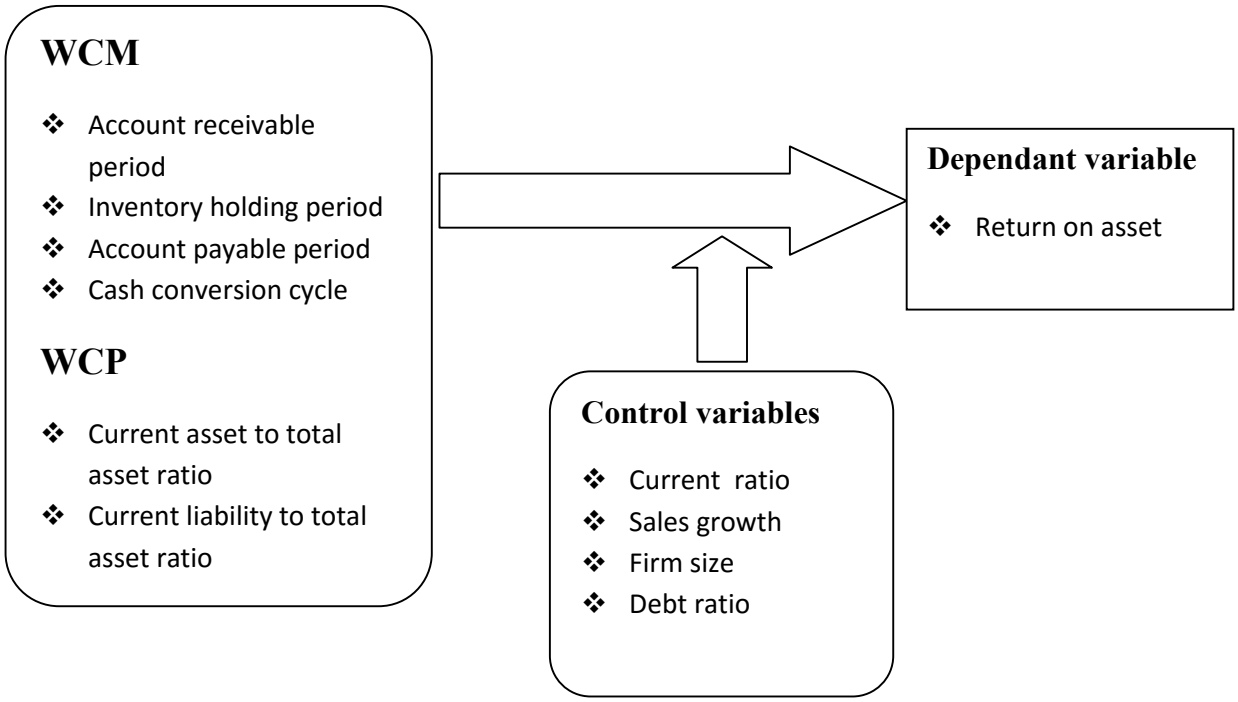
industry. Kinuthia (2015) carried out a study on the relationship between working capital management and profitability in the retail firms in Kenya. The study found that working capital management has significant effect on profitably of retail firms. Louw (2014) found that, that working capital management strongly influences firm profitability of retail companies. He suggests that poor management of working capital significantly negatively affect profitability. Hassan & Ibrahim Ali (2016) found that working capital management components had a significantly influence on firm profitability of merchandise firms. Chuansim(2016) found that profitability of wholesale highly influenced by working capital management efficiency of a firm. However, to the best of researcher knowledge there is no any empirical evidence on the impact of working capital management on profitability of Ethiopian wholesale industry.

In case of Ethiopia no any research had been conducted empirically on the impact of working capital management on profitability of wholesalers. Therefore, this study addressed the knowledge gap and provide use full support for better understanding on the impact of working capital management on firms profitability in selected wholesalers that located in Addis Ababa city, Ethiopia.

2.8. Conceptual Framework

The following figure portrays schematic conceptual framework of the relationship between working capital management measures and profitability of firms.

Figure 2.2 Conceptual framework



Source: Authors design

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

The pervious chapter presented both excising theories related to working capital management and some prior empirical evidence on abroad and Ethiopian context and tried to identify the gap the study wants to address. The purpose of this chapter is to explain the methodologies adapted by the researcher in the course of the study in order to accomplish the research objectives. This chapter presents research design used in order to examine the impact of working capital management on profitability. It also describes about source of data and collection tools. Moreover, it includes explanation about sampling design, description of variables and the analysis techniques used in the study. Finally, discussion about model specifications was include under this chapter.

3.1 Research design

Research design is the conceptual structure within which research is conducted. It includes the way sample selected, type of data used, the variables included in the study and the analysis techniques employed in the study. It also called the overall outline or plan the researcher do which starts from research objective up to the final analysis part (Kothari, 2004). There are three main alternatives of research approach exists in which their main difference was based on nature of research, the objective of the study and the instruments used during data collection, analysis and interpretations. These are quantitative, qualitative and mixed methods approach (Creswell, 2009). The main purpose of this study is to examine the impact of working capital management on firm profitability and by considering the nature of the problem and objective of the study quantitative approach was appropriate for this study. Quantitative approach is one of the approaches of research which is structured, systematic and scientific investigation of variables and their relationship. This approach starts from theory and known facts and mathematically proofs that theory by using different analysis techniques and finally objective generalizations are made. According to Abiy et al. (2013) explained that research objective and hypothesis

developed determined research design used by the researcher. In order to achieve the objective of this research, the study was adapted explanatory research design. The rational for choosing explanatory research design was first it used to examine the cause and effect relation between dependant and independent variable, second used to explain how they affect each other and to know the magnitude of relation between them. It also used to examine the trends over time and to compare across different firms and to proof already existing theory and to made prediction and generalization (Abiy et al., 2013).Therefore, in order examine the impact of working capital management on firms profitability, to determine the magnitude of the relationship between them and how working capital management affect profitability this study adapted explanatory research design which is appropriate as per the objective of the study by using panel data for the period of five years which was collected from 62 firms with a total of 310 observations.

3.2. Source of data and collection tools

By considering objective and research design the study was only depends on secondary data which was collected from selected 62 large tax payers wholesale firms found in Addis Ababa for the period of five years (2011-2015) for the total number of 310 observations. Using secondary data as source of data have the advantage of reliability and objectivity of data, to make trend analysis at different time and across different cross-sections and it is abettor source of data to answer the question why and how one variable affect the other variable.

3.3. Sampling design

A population is the total number of elements in which researcher wants to study. It is difficult to study the whole population due to shortage of time and money and it became difficult to manage the study and to make analysis of the whole population data. In order to avoid such type of problem most of researcher select a portion of the population which is called sample. Accordingly, the target population of the study includes all large tax payer wholesale trade firm found in Addis Ababa city. The reason for selecting large tax payer wholesale trade firms was due to the availability of necessary data for the study. Björkman &Hillergren(2014) defines that wholesale industry is merchant that is not aimed at private consumers. Wholesale industry neither operates directly to individuals such as the retail industry, nor have any brand names on

products, such as the manufacturing industry due to this it also known as invisible value creator. Wholesale industry plays a crucial role to cost effective distribution of products by reducing the transaction cost. In wholesale industry large quantities of product is traded and has economic of scale which affect the price of goods and plays significant contribution in the economy. Since the objective of any firm is to be more profitable specifically in retail and whole sale industry management of working capital is a part of day to day operation and its effect on profitability should be considered. As long as working capital management has an impact on performance of firm it should be managed in the way profitability would be improved. Working capital management for wholesalers is their day to day activities and the asset composition of wholesalers is mostly dominated by working capital so that, the way it managed has significant impact on profitability and the main components of working capital (inventory, account receivable and payable) has significant role in wholesale industry. Due to the above reasons this study limited to wholesale industry.

Large tax payers are those firms which have annual sales greater than 27 million birr are included in large tax payer category. The new revision entry in to large tax category had been effective starting from August 7, 2013. Prior to August 7, 2013 the entry in to large tax payers were firms annual sale greater than 15 million birr. The total number of population included for this study is all large tax payer wholesale trade firms found in Addis Ababa. Therefore, the total number of population eligible and include in this study was (250) all whole sale trade firm found in Addis Ababa and submit their annual report to Ethiopian revenue and customs authority (ERCA) large tax payers office(LTO) Addis Ababa up to August 31 2015 (ERCA,2015).

Purposive sampling method was used in order to select firms in included in the study which have the advantage of getting rich, informative data and give chance for researcher to emphasis on needed information. Purposive sampling method was adapted due to the following requirements to be included in the study. The first criteria the study used in order to select sample firms included was including those firms which have a complete record of five year financial statement because of that all wholesale trade firms don't have a complete record of five years financial statement for a period of 2011 to 2015 was not included. In order to exclude those firms which haven't a complete record for five year the researcher used purposive method of sampling.

The second criteria purposive sampling method appropriate for this study was the data of the sampled firm is collected from ERCA firms submit for tax purpose as result some organizations prepare financial statement inappropriately. In order to avoid making false analysis based on wrong data the researcher used purposive sampling by including only those firm prepare financial statement according to international standard.

The study includes 62 purposively selected large tax payers wholesale trade firms from the total of 250 large tax payers wholesale trade firms found in Addis Ababa city. The researcher tried to make the sample representative of the population. According to Mugenda and Mugenda (2003) conclude that a sample of 10-30% of the total population was adequate if the sample is properly selected. The sample of firms include in the study was 24% of the total population which is adequate.

3.4. Variable description

In order to investigate the impact of working capital management on profitability, the study used a total of eleven variables which further categorized in to dependant, independent and control variables. The selection of variable for this study was based on alternative existing theories on the relation between working capital management and profitability and variables used by prior researchers to find out the impact of working capital on profitability in different countries (Padachi, 2006; Raheman & Nasr, 2007; Niresh, 2012; Wahab, 2015; Zelealem, 2016). This study was includes the following variables by categorising dependant, independent and control variables.

3.4.1. Dependant variable

Dependant variable is variables that depend on other variable and some wants to estimate. This study used return on asset as proxy of dependant variable to measure profitability in line to other prior researcher such as (Samiloglu & Demirgunes, 2008; Sharma & Kumar, 2011; Arshad &Gondal, 2013; Mbawni et al., 2016). Return on asset is a widely used financial tool to evaluate the amount of profitability that a firm has generated from their employed total assets. Since it measures how a firm efficiently managing and utilizing its operating asset to generate the given level of profit and it relates asset of firm with performance of firm it can be considered as a best to measure profitability of firm (Padachi, 2006). The greater this ratio indicates that a firm is

better efficiently utilizing its asset for the amount of profit generated. It can be calculated by the following formula.

$$\text{ROA} = \frac{Net\ incame}{Total\ aseet}$$

3.4.2. Independent variables

Explanatory variables are variables related to dependant variable and used to estimate the value of dependant variable. Independent variable such as cash conversion cycle, accounts receivable period, inventory holding period, accounts payable period, current asset to total asset ratio and current liability to total asset ratio were used in this study to measure the impact working capital management on firm's profitability. The description and the formula used to calculate each independent variable listed as follows.

Accounts receivable period (ARP)

Accounts receivable period measure and used as proxy to credit policy and to measure its effectiveness. The longer the accounts receivable period indicate that a firm taken longer time to collect its receivable and a firm has a larger amount of investment on receivable and a firm follows liberal credit policy. The formula used to calculate ARP is as follows.

$$\text{ARP}=\frac{\text{Account recivable}}{\text{Sales}}*365 \text{ days}$$

Inventory holding Period

Inventory holding period: it is the average period a firm takes to acquire goods and to sale those goods to customer. It measures the effectiveness of firm in managing its inventory and to evaluate inventory policy. The longer inventory holding period indicate that larger amount of capital invested in inventory. This ratio calculated as follows.

$$\text{IHD}=\frac{\text{Invontory}}{\text{Cost of goods sold}} * 365 \text{ days}$$

Accounts payable period

Accounts payable period: it used as proxy for account payable. It measures average number of days a firm takes to pay its short term obligation which a rise from purchase of products in credit from supplier. The longer account payable period represent a firm requires longer time to pay their short term obligation and the lower the amount of capital tied up in working capital. This ratio calculated as follows.

$$\text{APP} = \frac{\text{Accont payable}}{\text{Cost of goods sold}} * 365 \text{ days}$$

Cash conversion cycle

Cash conversion cycle measures the length of time a firm takes between cash out flows due to purchase of products and cash inflows due to sale of products. It used a proxy to measure over all working capital management efficiency. The longer the cash conversion cycle indicates that a firm has higher amount of investment in working capital. This ratio calculated by adding receivable collection period and inventory holding period and then subtracting account payable period from the sum of two periods. Cash conversion cycle calculated as follows.

CCC= receivable collection period+ inventory holding period- account payable period

Current asset to total asset ratio (CATAR)

Current asset to total asset ratio was used to measure the working capital investment policy of a firm. This ratio used by some prior researcher like Falope & Ajilore (2009), Niresh (2012), Mwangi et al. (2014), Henok (2015), Jeyan (2016) in order to identify working capital investment policy and to investigate its impact on profitability. It is an important variable to analyse the impact of all working capital on profitability, because it includes the total amount investment in working capital in calculation such as cash and other current asset not included in other measure of working capital. The amount of investment in current asset is low as relatively compared to total asset a firm employed it approaching to aggressive working capital investment policy. On the contrary, if a firm made low investment in current asset relatively to fixed asset indicate that firms adapt conservative working capital investment policy.

The following formula was used to measures the aggressiveness or conservatives of working capital investment policy.

$$\text{CATAR} = \frac{\text{Current asset}}{\text{Total asset}}$$

Current Liabilities to Total Assets Ratio (CLTAR)

Current liabilities to total assets ratio was used to measure working capital financing policy of a firm in this study. This ratio used by some prior researcher like Falope & Ajilore (2009); Niresh (2012); Mwangi et al. (2014); Henok (2015); Zelalem(2016) in order to identify working capital financing policy of a firm follows and its impact on profitability. The more a firm use short term debt as a source of finance indicate that a firm follows aggressive working capital financing policy. On the other hand, the more a firm use long term debt as a source of finance implied that a firm follows conservative working capital financing policy. The following formula was used to measures the aggressiveness or conservatives of working capital financing policy.

$$\text{CLTAR} = \frac{\text{Current laiablity}}{\text{Totl asset}}$$

3.4.3. Control variables

Control variables were used to measure the strength of relationship between variables and to identify the degree of influence of independent variable on dependant variable. These variables are not the major focus of the study but it inherently affects the study. The control variable which is specific to firms include in these study were; current ratio, firm size, sales growth and debt ratio.

Current ratio (CR): is one of the most known and frequently used measurers of short term solvency. It measures the extent in which current liability covered by those assets that converted in to cash in near future date. Current ratio considered as control variable in various previous studies conducted on the impact of working capital management on profitability in different countries like (Raheman & Nasr, 2007; Charitou et al., 2010; Arshad & Gondal, 2013; Niman, 2015; Wahab, 2015). This ratio calculated by the following formula.

$$\text{CR} = \frac{\text{Current asset}}{\text{Current laiablity}}$$

Firm size (FS): it is one of the control variables included under this study. The intention to include firm size as a control variable was to determine degree of the impact of firm size on the association between working capital management and profitability. It measured by natural logarithm of sales.

FS = Ln(Sales)

Sales growth (SG): it is one of the control variable used in this study in line to other researcher like (Falope &Ajilore, 2009; Charitou et al., 2010). It calculated by subtracting last year sales from current year sale and divided by last year sales. The following formula used to calculate Sales growth

SG = (Sales t – Salest-1)/Salest-1

Debt ratio (DR): measures the ability of firm to satisfy its total obligations and long term solvency. It is the portion of asset financed by debt. This ratio calculated by the following formula

$$DR = \frac{\text{Total debt}}{\text{Total asset}}$$

3.5. Data analysis

There were various analytic techniques exist in order to undertake one research. Based on the objective of this study balanced Panel data of 62 wholesale trade firms for the period of five years were used. Panel data which combining both time series and cross sectional data has greater advantage over only cross section or time series data because of its two dimensional nature, it have the advantage of more information for accurate analysis and it helps to minimize the problem of collinearity between variables (Gujarati, 2004). By considering objective of research, the hypothesis drawn and type of research approach the study this study were used descriptive analysis, correlation analysis and the regression analysis in order to investigate the collected panel data. The overall analysis was takes place by using STAT software version 12.

Descriptive analysis

Descriptive analysis was used in this study as a first part of analysis and use by many prior researchers in order carried out quantitative analysis before going to detailed regression analysis. It is used to describe relevant aspects of working capital management and profitability on wholesale trade firm found in Addis Ababa and to provide detailed information about each variable included in this study.

Correlation analysis

Correlation analysis is used to identify the direction of relationship between two variables and to measure the degree of association between variables. Pearson's correlation coefficient was used in this study in order to find out whether there is direct or inverse relation between variables and to measure the extent of relationship between two variables. The value of correlation lies between +1 and -1. A correlation coefficient nearly close to either –1 or +1 indicates that there was strong inverse or direct relationship between variables respectively, where as a correlation coefficient of zero indicates that the variables are uncorrelated.

Diagnostic tests

Diagnostic tests were used in order to check the model fulfil the basic assumptions of classical linear regression model (CLRM). Diagnostic tests like heteroskedasticity test, autocorrelation test, multicollinearity test and normality test were used in this study. Moreover, the Hausman specification test was used in order to select between the random effect (RE) and fixed effect (FE) model in order to determine which is appropriate for this study.

Regression analysis

Multiple regression analysis was used to determine the cause and effect relationship between working capital management and profitability of selected wholesale firms in Addis Ababa. This study employed panel least square method analysis in order to find out whether there is significant relation between working capital measurers and profitability.

3.6. Model specifications

As shown in the analysis part the study was used panel data regression model combining both cross sectional and time series data together. The study included account receivable period, inventory holding period, account payable period, cash conversation cycle, current asset to total asset ratio and current liability to total asset ratio as an independent variable and return on asset as dependant variable along with some control variables. In order to examine the impact of working capital management on profitability of selected wholesale firm in Addis Ababa this study used the model used previously by (Raheman & Nasr,2007); (Jamiu &Ayokunle, 2014); (Ademola, 2014).

The general model specified as

$$ROA\ it = \beta_0 + \sum \beta_{i\ X_{it}} + £$$

Where:

ROA it = Return on asset of a firm i at time t; i = 1, 2, 3…, 62 firms.

β_0=the intercept of equation β_i =are coefficients of Xi variables

X it = the different independent variables for working capital management of firm i at time t.

t = Time from 1, 2…, 5 years and

£ =Error term

Based on the above general model in order to examine the effect of working capital management on profitability of selected wholesalers this study further converted the general model in to specified variables.

$$\mathbf{ROA\ it = \beta_0 + \beta_1(ARP\ it) + \beta_2(IHP\ it) + \beta_3(APP\ it) + \beta_4(CCC\ it) + \beta_5(CATAR\ it)\ \beta_6(CLTAR\ it) + \beta_7\ (CR\ it) + \beta_8\ (DR\ it) + \beta_9(SG\ it) + \beta_{10}(FS\ it) + \varepsilon_{it}}$$

Where:

β_0 = intercept of the regression,

β1, β2 .....,β10= coefficients of each respective explanatory variables,

ROA it = Return on asset of firm i for time period t

ARP it= Accounts receivable period of firm i for time period t

APP it = Accounts payable period of firm i for time period t

IHP it = Inventories holding period of firm i for time period t

CCC it= Cash conversion cycle of firm i for time period t

CATAR it=Current asset to total asset ratio of firm i for time period t

CLTAR it=Current liability to total asset ratio of firm i for time period t

CR= Current ratio of firm i for time period t

DR= Debt ratio of firm i for time period t

SG= Sales growth of firm i for time period t

Size it= Natural logarithm of sale of firm i for time period t

ε_{it} = is the error term of the regression – for firmi at time t

CHAPTER FOUR

DATA INTERPRETATION AND ANALYSIS

Introduction

This chapter includes the result of analysis of the impact of working capital management on profitability. Section 4.1 and section 4.2 presents the summery of descriptive statistics and correlation analysis of each variable respectively. Section 4.3discusses the diagnostic test employed in order to test the assumptions of CLRM and model selection criteria. Section 4.4 presents the regression result In order to examine the impact of working capital management on profitability. Finally, section 4.5 includes discussion of the result of regression between dependant and explanatory variable and compression of the result of this study with the finding of prior empirical studies.

4.1. Descriptive statistics

In this section the result from descriptive statistics of both dependant and independent variable is presented. Table 4.1 presents the mean, Standard Deviation, minimum and maximum value of each variable for sample of 62 wholesale trade firms for the period of 5 years from year 2011-2015 with a total of 310 observations.

Table 4.1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	310	.177303	.1538316	-.7173172	.9464331
ARP	310	42.2173	54.06658	0	800.3201
IHP	310	130.4392	113.7179	0	683.1824
APP	310	33.47166	52.90512	0	515.8735
CCC	310	139.8146	128.5937	-389.3947	1004.931
CATAR	310	.680861	.2145146	.0260178	.9997179
CLTAR	310	.3418552	.2164744	.01234	1.160368
CR	310	3.689126	5.811002	.2773946	59.15892
DR	310	.5334693	.2631619	.0628168	1.693048
FS	310	18.81718	1.120615	16.02424	23.48331
SG	310	.2810352	.7260384	-.83184	7.28015

Source: STATA output results from sampled firms 2011-2015

As it is presented in the above table 4.1 the mean value of profitability measured by ROA was on average 17.73 percent. It means that, Ethiopian large wholesaler generate on average 17.73 percent from their total asset employed. The higher the value of return on assets indicates that firms is effective in generating profit from its asset employed and the reverse is true for lower the value in return on assets. The standard deviation of return on asset (ROA) is 15.38 percent and it shows that the value of return on asset can vary both sides by 15.38 percent from the mean. Its minimum value is -71.73 percent while the maximum is 94.64 percent.

Accounts receivable period, a measurement for credit collection policy, is averaged to 42 days for the sampled firms. It means that, sample firms wait 42 days on average to collect their credit sales. The account receivable period, can vary both sides by 54 days from the mean value and the value of account receivable period for sampled firms ranges between 0 and 800 days of minimum and maximum values respectively. The minimum value of zero represent the firm didn't use receivable to sale goods or firm sales goods in cash only.

The mean value of inventory holding period is 130 days. This shows that, a sampled firm takes on average 130 days to sale inventory. The standard deviation of inventory holding period is 114 days. The value of inventory holding period for sampled firms ranges between 0 and 683 days of minimum and maximum values respectively.

The mean value of account payable period is 33 days. The standard deviation of account payable period for the sample firms is 53 days with 0 and 516 days as minimum and maximum periods respectively.

The mean value of cash conversion cycle, which used as a comprehensive measure of working capital management, has an average 140 days with the standard deviation of 129 days. The minimum value of -389 days shows that a firm records a large inventory turnover and/or cash collections from credit sales before making a single payment for its credit purchases. It means that the accounts receivable period and/or the inventory holding period are very short and/or the accounts payable period of the firm is very long. On the other hand, the maximum time for cash conversion period is 1005 days which is a very long period and it shows that a firm records a small inventory turn-over and/or cash collections from credit and/or shortest payment period for credit purchases. It means the accounts receivable period and/or the inventory holding period are very long and/ or the accounts payable period of the firm is very short.

The current asset to total asset ratio, used as a measure of aggressiveness/conservatives of working capital investment policy and has an average 68 percent of total asset. This value indicates that, sampled firms follow relatively conservative working capital investment policy in administrating their current asset. The higher the value of current asset to total asset ratio indicates that firm's investment policy approaches to conservative. This amount can vary by 21percent to both sides. The minimum value is 2.6 percent and this value indicate highly aggressive policy while the maximum value of current assets to total assets ratio is 99.97 percent which represent the highly conservative investment policy in the sampled firms during the study period.

Current liability to total asset ratio, used as a measure of aggressiveness/conservatives in financing their working capital needs has an average 34 percent of total asset. This lowest ratio of current liabilities to total assets ratio shows that the less aggressiveness of the firm in

financing its current asset. Current liability to total asset ratio can deviate by 22 percent to both sides. The maximum short term financing used by the firm is 1.16 and its minimum level is 0.012.

The above table 4.1 also includes the descriptive statistics of control variables that were used in the study. The first control variable included in this study current ratio, which is traditional measure of liquidity, is on average 3.68 with standard deviation of 5.81. It means that, current asset of sample firms is on average 3.65 more than its current liability and it indicate that sampled firms are good in liquidity position. The value of current ratio ranges between 0.27 and 59.15 minimum and maximum respectively. The result of descriptive statistics shows that the average debt ratio for sample firms is 53.94 percent with a standard deviation of 26.31percent. The minimum and maximum value of debt financing used was 6 percent and 169 percent respectively. The third control variable, sales growth is 28 percent on average and this value vary to both sides of the mean value by 72 percent. The minimum and maximum values of sales growth are -0.83 and 7.28. Lastly, firm size which measured by the natural logarithm of annual sales, is 18.81 on average and standard deviation is 1.12. The minimum and maximum values of firm size for the sampled firms are 16.02 and 23.48 respectively.

4.2. Correlation analysis

It is common in most study making correlation analysis among variables before going to detail regression analysis. Correlation analysis is used to identify the direction of relationship between two variables and to measure the degree of association between them. Correlation analysis is conducted in this section in order to analyze the relationship between working capital elements and profitability.

The table 4.2 below shows the correlation among components of working capital, profitability and some control variables.

Table 4.2 Correlation matrix between variables included in this study

	ROA	ARP	IHP	APP	CCC	CATAR	CLTAR	CR	DR	FS
ROA	1.0000									
ARP	-0.5720	1.0000								
IHP	-0.1596	0.0661	1.0000							
APP	-0.2233	0.4088	0.1215	1.0000						
CCC	-0.3335	0.3725	0.8693	-0.1101	1.0000					
CATAR	0.1176	0.0473	0.1292	0.0803	0.1034	1.0000				
CLTAR	-0.0096	0.0071	-0.2059	0.2438	-0.2858	0.2314	1.0000			
CR	-0.0436	-0.0554	0.1527	-0.1746	0.1827	0.1580	-0.4399	1.0000		
DR	-0.1105	-0.0444	-0.1805	0.1174	-0.2351	0.0124	0.5540	-0.1960	1.0000	
FS	0.1303	-0.1361	-0.1934	-0.0629	-0.2133	0.1289	0.3040	-0.1433	0.0250	1.0000
SG	0.0785	-0.0699	-0.1333	0.0219	-0.1587	0.0873	0.1097	-0.0675	0.0327	0.1101

	SG
SG	1.0000

Source: STATA out put from financial statement of sample firms 2011-2015

The result of correlation analysis in the above table 4.2 shows that there is negative relation between account receivable period and profitability measured by return on asset. It means that, the better firm profitability associated with fast collection of credit sales. Correlation analysis also carried out between inventory holding period and return on asset and the result shows that there is negative relation between inventory holding period and return on asset. The longer inventory holding period results lower profitability. There is negative relation between account payable period and return on asset. It means that, the longer the period of payable results lower profitability. This relation suggests that, less profitable firm wait longer periods to pay their obligation.

The correlation coefficient indicates that, there is also negative relationship between cash conversation cycle and profitability. The longer the cycle results the lower profitability. This relation suggests that, a firm improve their profitability and create value for shareholders are mainly depends on the ability of a firm to reduce its cash conversation cycle to possible minimum level as on as possible.

There is positive correlation between current asset to total asset ratio and return on asset. This indicates that, as the aggressiveness of working capital investment policy increase results lower profitability. The correlation between current liability to total ratio and return on asset is negative. This means that, there is negative association between degree of aggressiveness of working capital financing policy and profitability.

In addition, as it can be clearly seen in table 4.2. There is a negative correlation coefficient between current ratio and return on asset. There is also negative correlation between debt ratio and profitability. Finally, the correlation coefficient indicates that, there is positive relation between sales growth and firm size with firm profitability.

However, the relations we get from the correlation could be misleading for various statistical reasons. One and the important is that, the simple correlation above may reflect the effect of other factors which can influence both working capital management and profitability. Thus, an econometric analysis which controls other factors is needed in order to make sure that the pattern shown by the correlation above is not spurious. To do so, the random effect regression analysis is used and the discussion is based on the result of regression analysis.

4.3. Diagnostic test

4.3.1. Normality test

A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3. A distribution said to be normal when it is symmetric about its mean and also called mesokurtic, while a skewed distribution is not symmetric to its mean, it may be skewed to the left or right side of its mean. According to Brooks (2008) explained that if the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant. This occurs when the p-value given at the bottom of the normality test screen should be bigger than 0.05 to do not reject the null hypothesis of normality at the 5% level. This assumption is particularly essential if the sample size is small however, for sample sizes that are sufficiently large, violation of the normality assumption is virtually inconsequential. According to a central limit theorem, the test statistics will asymptotically follow the appropriate distributions even in the absence of error normality. However, in case of small sample size it is important to meet the assumption of normality for the p- values of the F-

test to be valid (Brooks, 2008). For small sample size specifically which is less than 100 observations, the normality assumption has crucial role for the test to be true and valid. For sample size that is sufficiently large, the assumption of normality is relaxed (Gujarati, 2004).

In small samples most statistical methods do require distributional assumptions, however least squares linear regression doesn't require any assumption of normal distribution in sufficiently large samples or observations. Linear regression can perform well with the data that are not normally distributed in case of large samples (Lumley et al., 2002). The statistical test used in this study in order to check normality of distribution is Shapiro-Wilk test statistic. The null hypothesis that the error term is normally distributed should not be rejected when the p-value of the test static greater than 0.05. In this study, the normality test statistic result indicates that the p- value of all variables is 0.000 which is less than 0.05 (**see appendix table 1**). This implies that there is a problem of normality in the model which is common in large sample. However, this study used large sample size the violation of this assumption doesn't have a severe impact on test validity.

4.3.2. Heteroskedasticity test

Homoskedastic error term is one of the classical liner regression models(CLRM) assumption required for the OLS estimator to be efficient. The homoskedastic assumption was fulfilled when the variance of disturbance term is constant and the same for all observation. If the disturbance terms do not have a constant variance across all observations the assumption of homoskedastic will be violated. The violation of this assumption said to be heteroscedasticity. If the problem heteroscedasticity exist in the model, the least squares estimators are still unbiased(consistent) however the Gauss- Markov theorem was violated in other words confidence interval will be unnecessary larger . As result, the t-test and f-test gives inaccurate result because of overestimation of variance the t-test will be smaller and statistically insignificant which lead s to wrong conclusion (Gujarati, 2004). There are several tests present to detect the violation of this assumption. This study used Breusch-pagan test in order to check the presence of the problem of heteroscedasticity in the model.

H0: There is homoscedasticity(no heteroskedasticity problem)

H1: There is heteroskedasticity

Table 4.3 Heteroskedasticity test

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of ROA

         chi2(1)      =     2.66
         Prob > chi2  =   0.1030
```

Source: STATA out put from financial statement of sample firms 2011-2015

As it is indicated in table 4.3 the result of hetroscedsticity test shows that p- value of statistic is 0.1030 which is more than 0.05. Therefore, the null hypothesis of homoskedasticity is failed to reject at 5 % significance level. This implies that, there is no detected evidence for the existence of hetroscedasticity in the model.

4.3.3. Autocorrelation test

This is an assumption that made on the covariance between the error terms is to be zero. It is assumed that the errors are not correlated with one another. If the errors are correlated with one another, it would be stated that they are auto correlated or serially correlated. The violation of this assumption means if there is a problem of autocorrelation between error terms has similar effect to the violation of hetroscedasticity. The OLS estimators are still unbiased and consistent, but they are no longer efficient, it means that the standard error estimates could be wrong. The usual t-test and f-test of significance will be in valid. Thus, misleading inference made about the statistical significance of the estimated regression coefficients (Brooks, 2008).This study used Wooldridge test in order to check the presence of the problem of autocorrelations.

H0: There is no autocorrelation

H1: There is autocorrelation

Table 4.4 Wooldridge test for autocorrelation

F(1, 61) =	0.771
Prob> F =	0.3833

(H0: no first-order autocorrelation)

Source: STATA out put from financial statement of sample firms 2011-2015

As it is indicated in table 4.4, the result of autocorrelations test shows that p- value of f- statistic is 0.3833 which is more than 5% of significance level. Therefore, the null hypothesis of no autocorrelation is failed to reject at 5 percent level of significant. This implies that, there is no detected evidence for the existence of autocorrelation in the model.

4.3.4. Multicollinearity test

Multicollinearity is an assumption that focus on the relation exist between independent variable included in the model. It is assumed that the explanatory variables are not correlated with one another and that is made when using the OLS estimation method. Actually, the correlation between explanatory variables will be non-zero, although this will generally be relatively benign in the sense that a small degree of association between explanatory variables will almost always occur but will not cause too much loss of precision. However, a problem occurs when the explanatory variables are very highly correlated with each other, and this problem is known as multicollinearity (Brooks, 2008). There is no clearly defined role how much correlation between variables causes multicollinearity. According to Hair et al.(2006) multicollinearity may not a serious problem for the correlation coefficient among the variables are less than 0.90. Pallant (2005) argues that multicollinearity is a serious problem when the correlation between two independent variables is more than or equal to 90 percent.

Table 4.5 Correlation matrix between explanatory variables

	ARP	IHP	APP	CCC	CATAR	CLTAR	CR	DR	FS	SG
ARP	1.0000									
IHP	0.0661	1.0000								
APP	0.4088	0.1215	1.0000							
CCC	0.3725	0.8693	-0.1101	1.0000						
CATAR	0.0473	0.1292	0.0803	0.1034	1.0000					
CLTAR	0.0071	-0.2059	0.2438	-0.2858	0.2314	1.0000				
CR	-0.0554	0.1527	-0.1746	0.1827	0.1580	-0.4399	1.0000			
DR	-0.0444	-0.1805	0.1174	-0.2351	0.0124	0.5540	-0.1960	1.0000		
FS	-0.1361	-0.1934	-0.0629	-0.2133	0.1289	0.3040	-0.1433	0.0250	1.0000	
SG	-0.0699	-0.1333	0.0219	-0.1587	0.0873	0.1097	-0.0675	0.0327	0.1101	1.0000

Source: STATA out put from financial statement of sample firms 2011-2015

As it presented in the above table 4.5 correlation matrix, there is no correlation greater than 0.9 which indicate that the absence of detected multi-corelinearity problem in the model.

4.3.5. Random effect versus Fixed effect models

There are broadly two classes of panel estimator approaches that can be employed in financial research. These are fixed effects models and random effects models. Fixed effects models allow the intercept in the regression model to differ cross-sectionally but not over time, while all of the slope estimates are fixed both cross-sectionally and over time. As with the same as fixed effects, the random effects approach proposes different intercept terms for each entity and again these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be the same both cross-sectionally and temporally. In order to identify which model is appropriate the study used Hausman test.

H0= Random effect model is appropriate

H1= Fixed effect model is appropriate

Table 4.6 Hausmen test

```
                    b = consistent under Ho and Ha; obtained from xtreg
     B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test:  Ho:  difference in coefficients not systematic

          chi2(10) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                   =       11.78
        Prob>chi2 =      0.3000
        (V_b-V_B is not positive definite)
```

Source: Stata out put from financial statement of sample firms 2011-2015

As presented in the table 4. 6, Hausmen specification test shows, the P- value of the models is 0.3000 which is more than 5% level of significance. This showed that the null hypothesis of the model which is random effect model is appropriate do not rejected at 5 percent of significant level. Therefore, random effect model is appropriate for this study.

In addition , The Breusch and pagan Lagrangian Multiplier (LM) test were used to decide between random effects and pooled OLS.

H0: Pooled OLS is appropriate

H1: Random effect model is appropriate

The result of Breusch and pagan Lagrangian Multiplier (LM) test indicate that the P- value of the models is 0.0000 which is less than 5% level of significance(**see appendix table 3**). This showed that the null hypothesis of the model which is pooled OLS model is appropriate is rejected at 1percent of significant level. Therefore, Random effect model is appropriate for this study regression analysis was made based on random effect estimates.

4.4. Random effect regression result

Table 4.7 Regression result of the model

```
Random-effects GLS regression                   Number of obs      =       310
Group variable: nofcompany                      Number of groups   =        62

R-sq:  within  = 0.5604                         Obs per group: min =         5
       between = 0.2566                                        avg =       5.0
       overall = 0.4238                                        max =         5

                                                Wald chi2(10)      =    324.13
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
ARP	.0029136	.0015079	1.93	0.053	-.0000418	.005869
IHP	.0037982	.0012861	2.95	0.003	.0012774	.006319
APP	-.0041439	.0012974	-3.19	0.001	-.0066867	-.001601
CCC	-.0041957	.0012863	-3.26	0.001	-.0067169	-.0016746
CATAR	.1695853	.0481584	3.52	0.000	.0751966	.2639739
CLTAR	-.0297751	.0519251	-0.57	0.566	-.1315465	.0719963
CR	-.0017824	.0014409	-1.24	0.216	-.0046066	.0010418
DR	-.0858703	.0350476	-2.45	0.014	-.1545624	-.0171783
FS	.0073011	.009759	0.75	0.454	-.0118262	.0264285
SG	.0007261	.0091701	0.08	0.937	-.0172469	.0186992
_cons	.0904736	.1847601	0.49	0.624	-.2716496	.4525968
sigma_u	.09370932					
sigma_e	.10057793					
rho	.4646913	(fraction of variance due to u_i)				

Source: STATA out put from financial statement of sample firms 2011-2015

The result of regression above table 4.7 shows, the models adjusted R^2 is 56.1%. This implies that 56.1% of the variations in the profitability of the firms are explained by the independent variables of the model. This means that 56.1% variation of profitability of sample wholesale

firm's explained by independent variable while the remaining 43.9% of variation of profitability will be explained by other factors which are not included in the model. There is a rule of thumb when the value of R^2 greater than 0.5 % the model was moderate fit. This indicate that the relation between working capital management and profitability moderately explained by the model. In addition, the value of wald chi^2-test which used to explains the overall fitness of a model, as it is indicated by the F-value of 324 which highly significant at 1% with p-value of 0.000. C is the coefficient of the intercept of the model and it represents the average value of ROA when all explanatory variables took a value of zero. This means that without these components, sample firms still survive due to some other factors which are not the focus of this research. The average value of ROA is 0.0904 if all explanatory variables took zero but it is statistically insignificant.

The random effect regression result in table 4.7 indicates that, coefficient of ARP is 0.0029 with its p-value of 0.053 and had positive relation with profitability measured by return on asset. This means that, keeping other variables constant a day increase in days sales receivable results an increase in profitability of sampled firms by 0.29 percent and statistically significant at 10 % of significant level.

The regression output for inventory holding period in table 4.7 indicates that, coefficient of IHP is 0.0037 with its p-value of 0.003 and had positive association with profitability. This implies that, keeping other variables constant a day increase on inventory holding period associated with an increase in ROA of sampled firms by 0.37 percent and statistically significant at 1% of significant level.

As can be seen in the above table 4.7 reveal that, a coefficient of APP is -0.0041 and p-value of 0.001. This implies that, keeping other variables constant a day increase in the account payable period results a decrease of profitability by 0.41percent and statistically significant at 1%.

The results of the regression analysis for cash conversion cycle table 4.7 shows that, the coefficient of CCC is -0.0042 with its p-value of 0.001 and negatively related to profitability. This implies that, keeping other variables constant when cash conversion cycle increase by a day ROA would decrease by 0.42 percent and statistically significant at 1%.

The regression results in table 4.7 indicate that, a coefficient of current asset to total asset ratio is 0.1695 with its p-value of 0.000 and had positive relation with profitability. This indicate that, other variable in the model being constant when current asset to total asset ratio increase by 1 unit return on asset (ROA) would be increased by 16.95 percent and statistically significant at 1 % of significance level.

As can be presented in the above table 4.7 reveals that, a coefficient of current liability to total asset ratio is -0.0297 with its p-value of 0.566 and had negative insignificant relation with profitability.

4.5. Discussion of the regression result

This section presents the discussion of the detail analyses of the results of regression of each explanatory variable and their influence on profitability of firm. In addition, the discussion includes the compression with prior empirical evidence in relation between working capital management and its impact on profitability and the finding of this study in compression with prior empirical finding and hypothesis of the study.

4.5.1. Relationship between accounts receivable period and profitability

The result of regression shows that account receivable period is positively related with profitability and significant at 10 % of significant level. This result is on the contrary of the hypothesis initially was that there is significant negative relation between ARP and profitability. This result implied that, when ARP increased by one day profitability also increase by 0.29 percent. The reason is that aggressively collecting receivable adversely affects wholesale firms profitability mostly depends on selling large volume of goods to retailers in delay payment. The other reason may because a firm collects their receivable lately encourages purchases as a result sale increase which decrease the cost of warehouse if the goods wait in warehouse for longer time. Giving more time for costumers to collect cash from credit sales used as one means of garneting product quality for costumers by giving more time to evaluate product quality and create long term relation with customers who increase the loyalty and future profitability of the firm. Large firm like wholesalers gives credit to financial constraint retailers by doing that wholesaler increase their future sale. The finding is in line with findings of Chebet (2014) found

that there was positive relation between average collection period and return on asset. Arushad & Gondal (2013) explained that longer accounts receivable period results higher profitability. This result also supported by Sharma & Kumar (2011), Ali &Ali (2012), Uremadu & Egbide (2012), Tariq et al. (2013), Onodje (2014), Mbawuni (2016). However, this result contradict with the finding of most studies like Lazaridis &Tryfonidis (2006), Raheman and Nasr (2007), Tewodros (2010), Mulualem (2011) found negative relationship between average collection period and profitability. The longer a firm wait to collect its credit sales results profitability to go down because the longer the period of the receivable decrease the present value of cash flows if that fund invested on other more profitable business results more profitability and due to that higher receivable result unnecessary bad debt expense.

The first hypothesis of this study was significant negative relation between account receivable period and profitability. In the contrary to the hypothesis the result indicates that return on asset insignificantly positively associated with account receivable period. Thus, the hypothesis of significant negative relation between account receivable period and profitability is rejected.

4.5.2. Relationship between inventory holding period and profitability

The result of regression shows that inventory holding period is positively related with profitability and it is statistically significant at 5% of significance level. This means that, a day increase in inventory holding period results an increase in profitability by 0.37 percent and it is statistically significant. This implies that a firm increase their profitability by increasing the period of inventory hold by a firm. The reason was because of holding higher amount of inventory in sore decrease the cost of possible shortage during selling process and reduces the risk of a stock-out. Keeping high amount of inventories also helps in reducing the cost of supplying the products and protects the firm against price fluctuations because of adverse macroeconomic factors. Wholesalers are participating in import and export trade which is vulnerable to price fluctuations and economy variability in the country at large. Maintain high level of inventory increase sale of firm which intern increase profitability. This finding consistent with prior studies Matheva (2010) found that there was significant positive relation between inventory conversion period and profitability. This means that maintaining high amount of inventory improve profitability by reducing the cost of possible stoppage of production and loss of business because of shortage of products. This finding consistent with prior other studies

Makori & Jagongo (2013), Şamiloğlu & Akgün (2016), Gambo & Abdulkarimibn (2016), Abenet (2016) with their respective studies found there was significant positive relation between inventory holding period and profitability. However, the result obtained is inconsistent with most prior studies Deloof (2003), Lazaridis & Tryfonidis (2006), Yadav & Kumar (2014), Tewodros (2010), Arega et al. (2016) found that negative relation between inventory holding period and profitability by suggesting that a firm would maintain minimum level of inventory in order to improve their profitability.

The second hypothesis of this study was significant negative relation between inventory holding period and profitability. In the contrary to the hypothesis the result indicates that return on asset significantly positively related with inventory holding period. Thus, the hypothesis of significant negative relation between inventory holding period and profitability is rejected.

4.5.3. Relationship between accounts payable period and profitability

As can be presented in the above table 4.7 account payable period is negatively related with profitability and it is statistically significant at 1% of significance level. This means that, a period increase in account payable period by one day results a reduction in profitability by 0.41 percent and it is statistically significant at 1 % of significance level. The reason for negative relation can be less profitable firm wait longer periods to pay their obligation. In most cases wholesalers purchase products from manufacture in delay payments and when the period increase results interest rate fluctuations harms profitability and if there is cash discount for early payment adversely affect profitability. This finding is consistent with Arega et al. (2016) explained that there was significant negative relation between accounts payable period and profitability when there is a benefits payment discounts for early payment. This finding also supported by Lazaridis &Tryfonidis (2006), Deloof (2003), Raheman & Nasr (2007), Sharma & Kumar (2011), Şamiloğlu & Akgün (2016) explained that the longer account payable period indicate that firms are less profitable. On the contrary of this finding Mathuva (2010) and Makori &Jagongo (2013) in their respective study found there was positive relation between account payable period and profitability by suggesting that more profitable firms wait longer period to pay their obligations so as to take the advantage of funds available in order to meet their working capital needs. Others like Tirngo (2013), Sharma & Kumar (2011), Abenet (2016) in their respective studies also support the positive relation between account payable period and profitability.

The third hypothesis of this study was significant positive relation between account payable period and profitability. However, in the contrary to the hypothesis the result indicates that there is negative relation between account payable period and profitability measured by return on asset. Thus, the hypothesis of positive relation between account payable period and profitability is rejected.

4.5.4. Relationship between cash conversion cycle and profitability

As we have seen from random effect regression result table 4.7, this study confirms that cash conversion cycle has negative impact on profitability of sample wholesale trade firms. The regression result revealed that, significant negative relation between cash conversion cycle of sample wholesale firms and their profitability which indicate that here is a decrease in ROA by 0.42 percent as long as the cash conversion cycle lengthening by a day. This support that cash conversion is significantly negatively related with profitability. As presented in the literature part of this study, cash conversion cycle is the summation of account receivable period and inventory holding period subtracted by account payable period. Managing cash conversion cycle efficiently means efficient management of these three important components of working capital management. This negative relationship suggests that firms can improve their profitability by shortening the time difference between a firm's actual cash in follows and outflows. In other words by decreasing the time interval between expenditure for purchases of products and the collection of cash from sales of products. The negative relation can be explained that the shorter the time interval, the lower investment in working capital can help in order to improve profitability. A shorter cash conversion cycle may improve firm s profitability because it reduces the dependence of firm on external finance in order to meet their working capital needs. Another reason was that the shorter cash conversion cycle is an indication of firm's efficiency in utilizing its working capital which maximizes their profitability. Cash conversion cycle can be shortened by reducing account receivable period and inventory holding period or by increasing account payable period. The result of the regression indicate that account receivable period and inventory holding period had positive coefficient and had positive effect on the length of cash conversion cycle however the coefficient of cash conversion cycle is negative due to that the effect of account payable period on cash conversion cycle is more than that of receivable and inventory period.

This finding confirmed by Mathuva (2010) and Makori &Jagongo (2013) found significant negative relation between cash conversion period and profitability and they explained that firms should minimize the period of cash conversion cycle as on as possible in order to improve their profitability. This result is consistent to most prior studies like Deloof (2003), Shin & Soenen (1998), Lazaridis &Tryfonidis (2006), Abenet (2016), Arega et al. (2016), Jeyan (2016) ,Şamiloğlu & Akgün (2016), Ahmed et al. (2016) all found negative relation between cash conversion cycle and profitability. Contrary to this finding Gill et al. (2010), Sharma & Kumar (2011), Uremadu & Egbide (2012), Soekhoe (2012),Tariq et al.(2013), Sadiq (2016) found positive relation between cash conversion cycle and profitably.

The fourth hypothesis of this study was significant negative relation between cash conversion cycle and profitability. In line to the hypothesis the result indicate that return on asset significantly negatively related with cash conversion cycle. Thus, the hypothesis of the study negative relation between cash conversion cycle and profitably is confirmed.

4.5.5. Relationship between current asset to total asset ratio and profitability

As can be presented in the above table 4.7, this study revealed that current asset to total asset ratio has positive impact on profitability of sample wholesale and trade firms. The regression result indicate that, significant positive relation between current asset to total asset ratio of sample wholesalers and their profitability which means that, there is an increase in profitability by 16.95 percent when current asset to total asset ratio increase by one unit. This indicates that, a negative relation between degree of aggressiveness of investment working capital policy and return on assets. This finding consists with the fact that mostly wholesalers invest more of it funds on current asset and less of its funds invested in fixed asset. The higher current asset to total asset ratio indicate the lower the degree of the aggressiveness of working capital investment policy and the higher profitability will be. This finding confirmed by Afza &Nazir (2007) found significant positive relationship between total current liabilities to total assets and profitability which measured by ROA. As the current asset to total asset ratio increases, degree of aggressiveness decreases and return on assets increased. The result is consistent with Niresh (2012), Arushad & Gondal (2013), Mwangi et al. (2014), Henok (2015), Jeyan (2016) in their respective studies found that significant positive relationship between current asset to total asset ratio and profitability. Contrary to this finding Onwumere (2012),

Javid & Marie Zita (2014), Wahab (2015) found negative relation between current asset to total asset ratio and profitability.

The fifth hypothesis of this study was significant negative relation between current asset to total asset ratio and profitability. In the contrary to the hypothesis the result indicate that return on asset significantly positively related with cash current asset to total asset ratio. Thus, the hypothesis of the study negative relation between current asset to total asset ratio and profitably is rejected.

4.5.6. Relationship between current liability to total asset and profitability

As we have seen from random effect analysis method table 4.7, this study revealed that current liability to total asset ratio has insignificant negative impact on profitability of sampled wholesale trade firms. The result indicates that, weather firm use long term of finance or short term source of finance doesn't has significant impact on profitability of wholesalers. This result confirmed by Nirish (2012), Mwangiet al.(2014),Wahab (2015) found aggressive financing working capital policies have a negative non-significant impact on profitability. Contrary to this finding Onwumere (2012) found aggressive financing working capital policies have a positive non-significant impact on profitability of firms.

The last hypothesis of this study was significant positive relation between Current liability to total asset ratio and profitability. In the contrary to the hypothesis the result indicates that return on asset insignificantly negatively related with current liability to total asset ratio. Therefore, the hypothesis of the study significant positive relation between current liability to total asset ratio and profitably is rejected.

4.5.7. Relationship between control variables and profitability

Current ratio

Current ratio used in this study as a control variable. It used to measure the short term solvency of the firm. As we seen in the regression result table 4.7, the coefficient of current ratio indicate that, there is negative relation between current ratio and return on asset but it is insignificant. This indicate that, keeping other independent variables constant when current ratio increase

by 1 unit return on asset (ROA) would be decrease by 0.17 percent but it is not significant .This implied that, the higher firm current ratio results the lower the profitability of the firm. This result consistent with the theory that exist trade of created between liquidity and profitability objective. It indicates that the two objectives liquidity and profitability is inversely related. This result is consistent with the previous study Niresh (2012).

Debt ratio

Debt ratio used in this study as a control variable. It used to measure the long term solvency of the firm. As we have seen from random effect analysis method table 4.7,the regression result revealed that, significant negative relation between debt ratio of sampled wholesale trade firms and their profitability which indicate that, there is an increase in ROA by 8.59 percent when debt ratio decrease by one unit. This implies that, that debt ratio has negative impact on profitability of sampled wholesale trade firms which means that increase in debt financing negatively affects their profitability. This result supported by Garg & Gumbochuma (2015) found significant negative relation between debt ratio and profitability.

Sales growth

Sales growth used in this study as a control variable. The regression results in table 4.7 indicate that a coefficient of sales growth is 0.0007, but it is not significant. This indicate that, keeping other independent variables constant when firms grows by 1 year return on asset (ROA) would be increased by 0.07 percent but not significant. Thus, sales growth positively related with firm profitability.

Firm size

Finally, firm size used in this study as a control variable. As we have seen in the regression analysis table, there is positive relation between size of the firm and their profitability, however it is not significant. This implied that, as the size of the firm increase from time to time its profitability also increase, but not significant. Therefore, firm size is positively associated to profitability but it is insignificant which means that larger firms are not more profitable in sample wholesale trade firms. This result supported by Awan et al. (2014) found insignificant positive relation between firm size and profitability.

Table 4.8 below presents summary of actual and expected signs on the relation between working capital management and profitability.

Independent variable	Expected relation with ROA	Actual relation with ROA
ARP	Negative and significant	Positive and insignificant
IHP	Negative and significant	Positive and significant
APP	Positive and significant	Negative and significant
CCC	Negative and significant	Negative and significant
CATAR	Negative and significant	Positive and significant
CLTAR	Positive and significant	Negative and insignificant

Source: author's computation

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This chapter presents conclusion, recommendation and recommendation made for further researcher.

5.1. Conclusions

Many prior researchers suggest that efficient management of working capital management plays a great role in order to maximize firm profitability and to create value for shareholders. Maintaining optimal level of working capital helps the firm to run its day today business activities smoothly and it improve the ability of generating cash internally and decrease the dependence of firm from external source for its working capital needs. It also helps the firm to get better competitive position. Therefore, it is necessary for a firm to monitor and evaluate its working capital regularly in order to hold proper and to maintain adequate level of working capital.

This study conducted on the impact of working capital management on profitability of selected wholesalers firms found in Addis Ababa city. Based on the objective, the study employed quantitative approaches. Panel data was used which collected from a sample of 62 large tax payer wholesalers for the period of 2011-2015. The collected data was analyzed by using descriptive statistics, correlation analysis and regression analysis.

The study used return on asset as dependent profitability variable. Accounts receivable period, inventory holding period and accounts payable period were used as independent working capital management variables. Cash conversion cycle was used as comprehensive measures of working capital management. Current assets to total assets ratio was used as measurers of the degree of aggressiveness of working capital investment policy and current liabilities to total assets ratio has been used as a measure of the degree of aggressiveness of working capital financing policy. In addition, the study used current ratio, debt ratio, sales growth and firm size as a control variable.

The regression analyses of the accounts receivables period show that, it was positively related with profitability. This means that, the longer a firm takes to collect its credit sales results higher profitability. The reason is that aggressively collecting receivable adversely affects wholesale firms profitability mostly depends on selling large volume of goods to retailers in delay payment.

The regression analyses of the inventory holding period show that there was significant positive relation between this period and profitability. This means that, a firm increase their profitability by increasing the period of inventory hold by a firm. The longer firm inventory holding period result higher profitability. The reason was because of holding higher amount of inventory in sore decrease the cost of possible shortage of goods and reduces the risk of price variability.

The regression analyses of the accounts payable period show that, it was significantly and negatively associated with profitability. This means that, the longer account payable period results lower profitability and vice versa. The reason for negative relation can be less profitable firm wait longer periods to pay their obligation. The other reason explains that, when the period increase results interest rate flucation which harms profitability and if there is cash discount for early payment decease profitability.

The regression analyses of the cash conversion cycle show that there was significant negative relation between this cycle and profitability. This implies that, the longer cash conversion cycle, the lower profitability of firm. This negative relationship suggests that firms can improve their profitability by shortening the time difference between a firm's actual cash in follows and outflows. The shorter the cycle, the lower investment in working capital can help in order to improve profitability and reduces the dependence of firm on external finance. Cash conversion cycle is the summation of account receivable period, inventory holding period subtracted by account payable period. Managing cash conversion cycle efficiently means efficient management of these three important components of working capital management.

The regression result of the current asset to total asset ratio show that there was significant positive relation between this ratio and profitability. This indicates that, a negative relation between degree of aggressiveness of investment working capital policy and firm profitability. The higher current asset to total asset ratio indicate the lower the degree of the aggressiveness of

working capital investment policy and the higher profitability will be. In other words, the higher the degree of conservativeness of working capital investment policy leads to more profitability.

Finally, the regression result of the study indicates that current liability to total asset ratio had negative insignificant relation with profitability. This suggest that, weather the firm use short term finance or long term source of finance doesn't have significant effect on profitability of sample firms.

To sum up, the regression analysis of the study show that conservative working capital investment policy results better profitability and source of finance for working capital doesn't significantly affect profitability.

5.2. Recommendations

Based on the finding of the study the researcher recommends the following points

The relation between account receivable period and profitability is positive. The positive relation indicates less aggressive in collection of receivable leads to increase profitability. The study recommend that firms should be careful in setting credit policy that it does not harm their volume of credit sales which can adversely affect its profitability. The aggressive collection of receivable has harmful effect on profitability of firm. Therefore, the researcher recommends that it is better to a firm to follow a relatively liberal credit collection policy in order to maximize sales revenue.

The study found positive relationship between inventory holding period and firm's profitability. This means that holding inventory for long period of time increase profitability of a firm. This suggest that lengthening the inventory holding period could decrease the shortage cost of inventory which leads to higher sales volume and better profitability of a firm. The researcher recommend that firm should increase the level of inventory to reasonable level in order to improves profitability of a firm and to protect the problem of price flucation of products.

The study found negative relationship between account payable period and firm's profitability. It support that the view that quick payment for supplier might improve profitability of firms due to substantial discounts for early payment. However, the benefit should out weight the opportunity

cost because of early payment. Therefore, the researcher recommended that deferral of creditors should at minimum possible level to maximize profitability of firm.

The study found negative relationship between cash conversion cycle and firm's profitability. The shorter cash conversion cycle, the lower investment in working capital can help in order to improve profitability and reduces the dependence of firm on external finance. Managing cash conversion cycle efficiently means efficient management of the three important components of working capital management. The researcher recommend that firm should shortening cash conversion cycle as an indicator of efficient working capital management. Thus, in order to enhance the profitability a firm should minimize the length of time between cash out flows due to purchase of goods and cash inflows as result of sales of goods to possible optimal minimum level.

The study found positive relation between current asset to total asset ratio and firm profitability. The more a firm follows conservative working capital policy indicate that more resources are invested in current assets than fixed assets and helps firm can generate more profits . This suggest that adequate investment in working capital decrease the problem of insolvency and increase the profitability of firm since current asset are more liquid than fixed asset it can be sold quickly for immediate cash needs. Therefore, the researcher recommended that wholesalers would follow more conservative working capital investment policy which means that should invest more of its funds on short term asset than fixed asset in order to improve their profitability.

In general, to summarize the researcher confirmed that efficient management of working capital strongly influences profitability of a firm. The finding suggest that liberal credit collection, longer inventory holding period, quick payment of debt and keeping the length of cash conversion cycle to possible minimum level can increase the profitability of a firm. Firms with more conservative policy towards working capital can also help to generate more profit.

5.3. Suggestions for further research

This study raised the following points for further research towards on the effect of working capital management on firm's profitability.

First, the researcher used one variable to masseur profitability which is return on asset (ROA). However there are other variables in order to masseur profitability such as return on investment (ROI), gross operating profit (GOP), return on equity (ROE). So further studies could include those variables together due to that the result is different on different measurers of profitability.

Second, the study conducted on selected large tax payers wholesalers found in Addis Ababa for a period of five years. Further researchers should increase the sample size and increase the number of years for more validity.

Finally, this study focuses on the impact of working capital management on profitability specifically on wholesalers only. However, future researchers should also include manufacturing firm and retail firm in order to determine the difference on working capital management across different industry and its impact on profitability of a firm.

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Appendix

Appendix 1 Normality test

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
ROA	310	0.75185	54.429	9.397	0.00000
ARP	310	0.49028	111.799	11.089	0.00000
IHP	310	0.85425	31.968	8.146	0.00000
APP	310	0.62716	81.776	10.354	0.00000
CCC	310	0.84621	33.731	8.272	0.00000
CATAR	310	0.95839	9.126	5.199	0.00000
CLTAR	310	0.94667	11.697	5.782	0.00000
DR	310	0.93282	14.736	6.325	0.00000
CR	310	0.43109	124.782	11.347	0.00000
FS	310	0.90911	19.934	7.035	0.00000
SG	310	0.48457	113.052	11.115	0.00000

Appendix 2 Hasuman test

```
. hausman fixed .
```

	Coefficients (b) fixed	(B) randem	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
ARP	.0019771	.0029136	-.0009366	.0007694
IHP	.0027913	.0037982	-.0010069	.0006261
APP	-.0033045	-.0041439	.0008393	.0006337
CCC	-.0033043	-.0041957	.0008914	.0006429
CATAR	.1758924	.1695853	.0063072	.0375989
CLTAR	.0034317	-.0297751	.0332068	.0237821
CR	-.0005881	-.0017824	.0011942	.0005076
DR	-.0661862	-.0858703	.0196841	.0145721
FS	.0207407	.0073011	.0134396	.0098236
SG	-.0022906	.0007261	-.0030167	.0027011

```
                b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                chi2(10) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                         =       11.78
              Prob>chi2 =      0.3000
              (V_b-V_B is not positive definite)
```

Appendix 3 Breusch and Pagan LM test

```
Breusch and Pagan Lagrangian multiplier test for random effects

        ROA[nofcompany,t] = Xb + u[nofcompany] + e[nofcompany,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+-----------------------------
                     ROA |    .0326804       .1807772
                       e |    .0101159       .1005779
                       u |    .0087814       .0937093

        Test:   Var(u) = 0
                                chibar2(01) =   103.72
                            Prob > chibar2 =   0.0000
```

Appendix 4 Random effects regression result

```
Random-effects GLS regression                   Number of obs      =       310
Group variable: nofcompany                      Number of groups   =        62

R-sq:  within  = 0.5604                         Obs per group: min =         5
       between = 0.2566                                        avg =       5.0
       overall = 0.4238                                        max =         5

                                                Wald chi2(10)      =    324.13
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
ARP	.0029136	.0015079	1.93	0.053	-.0000418	.005869
IHP	.0037982	.0012861	2.95	0.003	.0012774	.006319
APP	-.0041439	.0012974	-3.19	0.001	-.0066867	-.001601
CCC	-.0041957	.0012863	-3.26	0.001	-.0067169	-.0016746
CATAR	.1695853	.0481584	3.52	0.000	.0751966	.2639739
CLTAR	-.0297751	.0519251	-0.57	0.566	-.1315465	.0719963
CR	-.0017824	.0014409	-1.24	0.216	-.0046066	.0010418
DR	-.0858703	.0350476	-2.45	0.014	-.1545624	-.0171783
FS	.0073011	.009759	0.75	0.454	-.0118262	.0264285
SG	.0007261	.0091701	0.08	0.937	-.0172469	.0186992
_cons	.0904736	.1847601	0.49	0.624	-.2716496	.4525968
sigma_u	.09370932					
sigma_e	.10057793					
rho	.4646913	(fraction of variance due to u_i)				