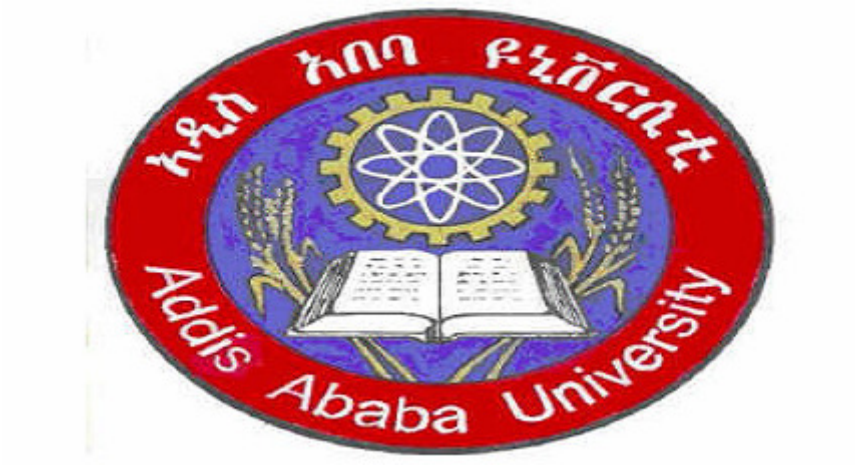

The Effect of Working Capital Management on Profitability of Grade One Construction Companies in Addis Ababa

By

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APPROVED BY BOARD OF EXAMINERS

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External Examiner	**Signature & Date**

DECLARATION

I, the undersigned, declare that this thesis is my original work; prepared under the guidance of Dr.Gebremedhin G/Hiwot. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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Abstract

An optimal working capital management is expected to contribute positively to the profitability of firms. The purpose of this study was to evaluate the Impact of working capital management and firm's performance in the case of grade one construction companies in Ethiopia. The study used secondary data obtained from audited financial statements of forty five grade one construction companies registered and work in Ethiopia. The financial statements from the firms were analyzed to determine the effect of cash conversion cycle, inventory conversion period, average Collection and payables outstanding on the gross operating profit. The data was analyzed using Stata (Version 12.0) Software. Estimation equation by both correlation analysis and cross sectional data regression was used for inferential analysis. The result revealed that company size in the study have positive coefficient and statistically significant effect on profitability , cash conversion cycle, and debit ratio in the research have negative sign of coefficient and significant effect. In contrast, the number of days inventory and the cash conversion cycle-CCC), on profitability measured are statistically insignificant. According to the results of the study, it is suggested that grade one contractor's can increase profitability by maintaining an optimal level of working capital. It is also recommended that level one construction company's s should adopt efficient and effective working capital management policies to keeping working capital at optimal level.

Key Words: Profitability, Working Capital, Cross sectional data, Grade one construction, Ethiopia

List of abbreviations/Acronyms

ACP: Average Collection Period

APP: Average Payment Period

CCC: Cash Conversion Cycle

CID: Capital Investment Decisions

CR : Current Ratio

DSO: Days Sales Outstanding

DR: Debt Ratio

ECM: Efficiency of Cash Management

EIM: Efficiency of Inventory Management

ERM: Efficiency of Receivable Management

FATA : Financial Assets to Total Assets

GOP: Gross Operating Profit

GWC: Gross Working Capital

ICP: Inventory Conversion Period

LOS: the size of the company

NWC Net Working capital

WCM: Working Capital Management

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Chapter one: Introduction

1.1 Background of the study

As postulated by Firer etal (2008), the three core areas of corporate finance are capital budgeting; which encapsulates the process of planning and managing firm's long turm investments, capital structure; which outlines the specific mixture of long-term debt and equity maintainable by a firms and Working capital management; which deals with management of firm's short term assets and liabilities. One of the most important factors for a firm to consider is the management of working capital, which is related to short term financing and investment decision of a firm.

The function of obtaining efficient working capital management is to maintain current assets and current liabilities in respect to each other and to generate maximum returns. Working Capital Management (WCM) is an important corporate financial decision since it directly affects the profitibility of the firm. Working capital management efficiency is vital especially for Construction firms, where the major part of assets and liabilities are composed of current assets, especially inventory and receivables, and current liabilities; payable. (Arunkmar etal, 2013).

The concept of working coapital management addresses companies' manageing of their short-term capital and the goal of the management of working capital is to promote a satisfaying liquidity, profitability and shareholders' value. It is the ability to control effectively and efficiently the current assets and current liabilities in the abilities in a manner that provides the firm with maximum return on its assets and minimizes payments for for its liabilities Gill etal (2010).

The short term capital refers to the capital that companies use in their daily operations and it consists of companies' current assets and current liabilities. A well managed working capital promotes company's well-being on the market in terms of liquidity and it also acts in favour of the growth of shareholders value (Jeng etal, 2006).

Working capital management efficiency is vital especially for construction firms, where a major part of assets is composed of current assets (Horne etal, 2000). It directly affects the profitability and liquidity of firms (Raheman etal, 2007). The profitability liquidity tradeoff is important because if working capital management is not given due considerations, then firms are likely to

fail and face bankrupcy (Kargar etal, 1994). The significance of working capital management efficiency is irrefutable (Filbeck etal, 2005). Working Capital is known as life giving force for any economic unit and its management is considered among the most important functions of corporate management. Every organization whether, profit oriented or not, irrespective of size and nature of business, requires necessary amount of working capital. Working capital is the most crucial factor for maintaining liquidity, survival, solvency and profitability of business (Mukhopadhvay, 2004).

Efficient management of working capital plays an important role of overall corporate strategy in order to create shareholder value. Working capital is regarded as the result of the time lag between the expenditure for the purchase of raw material and the collection for the sale of the finished goods. The way of managing working capital can have a significant impact on both the liquidity of the company (Shin etal, 1998). The main purpose of any firm is to maximize profit. But, maintaining liquidity of the firm also is an important objective. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm. Thus, strategy of firm must maintain a balance between these two objectives of the firm. Dilema in working capital management is to achieve desired trade off between liquidity and profitability (Raheman et al, 2007).

The purpose of this study is to assess the impact of working capital management on profitability of grade one construction companies in Addis Ababa.

Following this background, the chapter is organized in five sections. The first chapter deals with introduction, statement of the problems, objectives of the study, research objectives, significance of the study, and scope and limitation of the study. The second chapter related with literature review which contains theoretical and empirical have been reviewed and presented. In the third chapter, the research design including the methodology, the source and techniques of data collection, model specification and method of analysis is explained. Subsequently, the fourth chapter discusses the results and analysis of the findings of the study. Finally, the fifth chapter presents the conclusions and recommendations based on findings.

1.2. Statement of the problem

The firm can maximize their value by having an optimal level of working capital (Deloof, 2003). On the balance sheet, firms have large inventory and generous credit policy which leads to

higher sales. Large inventory reduces the risk of stock-out. Accounts receivables, which is a part of credit, stimulates sales because it allows customers to assess product quality before paying (Long etal 1993; and Deloof etal, 1996). The negative side of granting credit and keeping invetories is that money is locked up in working capital (Deloof, 2003). Another component of working capital is accounts payable, which keeps the credit not extend but receiving it from a supplier. The flipside is that receiving a credit can be expensive when firms offered a discount for the early payment. This is also the case with uncollected and extended credit, which can lead to cash inflow problems for the firm (Gill et al., 2010).

Researchers have studied working capital management in many different ways. While some authors studied the impact of an optional inventory management, others have studied the optimal way of managing accounts receivables that leads to profit maximization (Lazaridis and Tryfonidis, 2006; and Besley and Meyer, 1987). Other studies have focussed on how reduction of working capital improves a firm's profitability (Jose et al., 1996; Shin and Soenen, 1998; Deloof, 2003; Padachi, 2006; Raheman and Nasr, 2007; Samiloglu and Demirgunes, 2008; Sharma and Kumar, 2011).

Much of the currently available emprical litrature on working capital management is focussed on its impact on firms in developed countries. But, there are studies with reference to Ethiopia on working capital management and firm profitablity; Tewodros (2010) studied its impact on profitablity by taking 11 private limited manufacturing firms. He took Return on Asset(ROA), and Return on Equity(ROE) as a measure of profitablity. The results show that longer accounts receivable and inventory holding periods are associated with lower profitablity. There is also negative relationship between accounts payable pariod and profitablity measures. However, except for operating profit margin this relationship is not statstically significant. The results also show that there exists significant negative relationship between cash conversion cycle and profitablity measures of the sampled firms. On the other hand, Tiringo (2013) examined the impact of WCM on profitablity of micro and small enterprises in Ethiopia for the case of Bahrdar city aministration. The result showed that there is a strong possitive relationship between number of day's accounts payable and enterprises profitablity. However, number of days accounts receiveble, number of days inventory and cash conversion cycle have a significant negative impact on profitablity.

Wubshet (2014) examend the impact of working capital management on firm's performance by using a sample of 11 metal manufacturing private limited companies in Addis Ababa, Ethiopia for the period of 2008 to 2012. The performance was measured in terms of profitablity by return on total assets, and return on investment capital as dependent financial performance (profitablity) variables. The results show that there is no significant relationship between cash conversion cycle, accounts receivable period, inventory conversion period and accounts payable period with return on investment. On the other hand, findings show that a slightly significant negative relationship between account receivable period, inventory conversion period and accounts payable period with return on asset.

Mifta (2016) examined the impact of working capital management on profitability of of manufacturing share companies in Ethiopia by using a sample of 16 manufacturing share companies for a period of seven years (2008-2014) with the total of 112 observations. The data was analysed on quantitative basis using descriptive and regression analysis (Ordinary Least Square) method. The performance was measured in terms of profitability by return on total assets. It is found that there existes a significant negative relationship between average collection period and profitability indicating that an increase in the number of days afirm received payments from sales affects the profitability of the firm negatively; secondly, there exists a negative relatishinship between inventory holding period with profitability and positive relationship between accounts payable period and profitability. However, both inventory holding period and accounts payable period were found to be insignificant in affecting profitability of the firms. Thirdly, there exists a negative relationship between cash conversion cycle and profitability of the firms, which indicats that as the cash conversion cycle decreases leading to an increase in profitability of the firm, and managers can increase profitability of their firms by shortening the time lag between a firm's expenditure for purchases of raw materials and the collection of sales of finished goods. Finally, positive relationships between liquidity and profitability measures have also been observed. In general, it is recommended that firms should minimize working capital management components in order to maximize profitability.

Currently in Ethiopia, many contractors are unsatisfactory with shortfall in Current Assets over Current Liabilities resulting in negative Working Capital. This shortage of liquidity results in a slowing of cash flow along the contracting chain and creates payment problems for

subcontractors. Likewise it puts clients at risk of not having their contracts completed on time. This problem invokes the student researcher to conduct this study.

Acccording to the knowledge of the researcher, there was no study which has been conducted on construction companies in Ethiopia. Hence, this study is conducted to fill the gap on effect of working capital management on profitability of grade one construction companies in Addis Ababa.

1.3. Objective of the study

1.3.1 General Objective of the study

The overall objective of the study is to examine the effect of working capital management (WCM) on grade one construction companies' profitability in Addis Ababa.

1.3.2. Specific Objectives of the study

- To determine whether there is a significant effect of Average Collection Period (ACP) on Profitability of grade one construction companies.
- To estabilish whether there is a significant effect of Inventory Conversion Period (ICP) on Profitability of grade one construction companies.
- To ascertain if there is a significant effect of Average Payment Period (APP) on Profitability of grade one construction companies.
- To examine if there is a significant effect of Cash Conversion Cycle (CCC) on Profitability of grade one construction companies.

1.4. Research hypotheses and Questions

Based on this broad objective the following hypotheses (HP) and a specific research question were developed.

H1: Average Collection Period has negative and significant effect on profitability

H2: Inventory Conversion Period has Profitability are postively and significant effect on profitability

H3: Average Payment Period has postive and signficant effect on Profitability

H4*:* Cash Conversion Cycle has negative and signficant effect on Profitability

In addition to the hypotheses the study addressed the following specific research (RQs) questions:

1. What is the effect of Average Collection period on profitability on grade one construction companies in Addis Ababa?
2. What is the relationship between Inventory Conversion Period and Profitability on grade one construction companies in Addis Ababa?
3. How does the Average Payment period affects the Profitability of grade one construction companies in Addis Ababa?
4. What is the effect of Cash Conversion Cycle on Profitability of grade one construction companies?

1.5. Significance of the study

The aim of the study is to determine the effect of working capital management on profitability of grade one construction companies in Addis Ababa. The findings of the study will help the chief finance officer of construction companies in designing intervention strategies aimed at maximizing profit for their firms. Moreover, the finding of the study will contribute to the body of knowledge by identifying how Ethiopian construction companies manage their working capital in the local setting. A general WCM framework for policy makers, professionals and managers was formulated a guide which reappraise current business practices and provides basic guidelines for new policies in dynamic business environment.

Finally, the study has an important resource document for academicians and future researchers who may wish to investigate the performance of firms in relation to working capital management and profitability. In other words, the study can potentially serve as a stepping stone for further research in the same area.

1.6. The scope and limitation of the study

The study is delimited to the impact of working capital management on the profitability of grade one construction companies in Ethiopia, which covers only grade one construction companies in Addis Ababa. Among 119 grade one construction companies the researcher will analyze 45 grade one construction companies. The main limiatation for the study was some of the respondents are relectant to answer the equestions on time.

1.7. Organization of the paper

The study consists of five chapters of which chapter one deals with the introduction which includes background of the study, statement of the problem, the objectives, and hypothesis of the study, its scope, limitations and organization of the paper. Chapter two, deals with the review literatures of the study. The third chapter is about methodology of the study and the forth chapter dedicates on data analysis and interpretations. The last chapter, chapter five, presents the conclusion and the recommendation of the study.

Chapter two: Literature Review

2.1. Theoretical Review

2.1.1. An overview of working capital

Efficient working capital management is an integral component of the overall corporate strategy to create shareholder wealth. The way in which working capital is managed can have a significant impact on both liquidity and profitability of a company. Research by Taggart (1977) first signaled the importance of tradeoffs between dual goals of working capital management; that is liquidity and profitability. In other words, decisions that tend to maximize profitability tend to maximize adequate liquidity. Conversely, focusing entirely on liquidity tend to reduce the potential profitability of the company (Hendrickson, 1992).

Working capital management is concerned with making sure of a firm has exactly the right amount of cash and lines of credit available to the business at all times (Deloof, 2003). Cash is the lifeline of a company. If this lifeline deteriorates, so does a company's ability to finance operations, reinvest and meet capital requirement and payment needs. Understanding a company's cash flow health is essential for making investment decisions. An individual company's investment in working capital has been related to the type of industry in which it operates and the essential working capital policy each individual company adopts (Nyakundi, 2003). The investment concerns how much of the firm's limited resources should be invested in working capital. If further observes that finance decisions relate to how the investment in working capital is to be allocated.

2.1.2. Nature and importance of working capital

The working capital meets the short term financial requirements of a business enterprise. It is a trading capital, not retained in the business in a particular form for longer than a year. The money invested in it changes form and substance during the normal course of business operations. The need for maintaining an adequate working capital can hardly be requested. Just as a circulation of blood is very necessary in the human body to maintain life, the flow of funds is extremely necessary to maintain business in a healthy situation. If this becomes weak, the business can hardly prosper and survive. Working capital starvation is generally credited as a major cause of a business failure in many developing countries. The success of a firm depends ultimately, on its ability to operate cash receipts in excess of disbursements.

The cash flow problems of many businesses are worsened by poor financial management and in particular, the lack of planning cash requirements (Jarvis et al, 1996). While the performance levels of business have traditionally been attributed to general managerial factors such as manufacturing, marketing and operations, working capital management have a consequent impact on business survival and growth (Kargar et al, 1994). The management of working capital is important to the financial health of business of all sizes. The amount invested in working capital is often high in proportion to the total assets employed and so it is vital that these amounts are used in an efficient and effective way.

2.1.3. The concept and definition of working capital

The concept of working capital was first evolved by (Marx, 1867). Marx used the term variable capital meaning expenditure for payrolls advanced to workers before they completed the goods they worked on. He defferenciated this with 'constant capital', which he regulated as nothing but 'dead labour', that is, expenditure for raw materials and other instruments of production produced by labour. This 'variable capital' was the wage fund which remains blocked in terms of financial management, at work in process along with other operating expenses until it is released throuhgh sale of finished goods. Although Marx did not mention that workers also gave credit to the firm by accepting periodical payment of wages which funds a portion of working capital in process. The concept of working capital, as we understand today, was enbeded in his concept of 'variable capital'. With the evolution of the concept came controversy about the definition of working capital, which different people use the term 'working capital' differently. Working capital is usually defined as the current assets less current liabilities. The major part of current assets are inventories, accounts receivables and cash in hand and at bank while that of current liabilities are accounts payable and bank overdrafts.

Weston and Brigham (1977) defines 'working capital' as the capital invested in different items of current assets needed for the business, that is, inventory, debtors, cash and other current assets such as loans and advances to third parties. These current assets are essential for smooth business operations and proper utilization of fixed assets. Net Working capital (NWC), technically, is the difference between current assets and current liabilities, while Gross Working Capital (GWC) refers to the sum of all current assets.

Khan and Jain (2007) also argued that there are two concepts of working capital: gross and net.

The term gross capital aso refers to as working capital means the total current assets of business. The term net working capital can be defined in two ways (i) net working capital is the difference between current assets and current liabilities; (ii) the portion of current assets which is financed with long term funds.

2.1.4. Working capital management

A significant number of studies have been conducted on the issue of working capital, althoughfrom different perspectives and in different situations and environment.

According to Mawhiraju, (1999), working capital management involves administration of current assets and current liabilities which consists of optimizing the level of assets in partial equilibrium context. Working capital management involves the relationship between a firm's short term assets and liabilities.

Khan and Jain (2007) also stress that working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the interrelationship existing between them. Working capital management also refers to the decisions relating to working capital and short term financing and it involves managing the relationship between a firm's short term asset and its short term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short term debt and upcoming operational expenses. Working capital entails short term decisions generally relating to the next one year period which are 'revisable'. These decisions are therefore, not taken on the same basis as Capital Investment Decisions (CID) rather, theyhave been based on cash flow and or profitability. Every running business, needs working capital. Even a busines which is fully equipped with all types of fixed assets required are bound to collapse without (i)adequate supply of raw materials for processing; (ii) cash to pay for wages, power and other costs; (iii) creating a stock of finished goods to feed the market demand regularly; and (iv)the ability to grant credit to its customers. All these require working capital, which is thus, the lifeblood of a business. The business will not be able to carry on day to day activities withoutthe availability of adequate working capital. Working capital cycle mesearses being supplied to the buyer and the final receipt of cash from the sale of these goods. Advantageous to keep the cycle as short as possible as it increases the effectiveness of working capital.

2.1.5. Factors determining working capital requirements

There are several factors determining the working capital requirement of a company. However, it should be noted that it is subject to different circumstances. Primarily, the determining factors can be classified in to two types which are internal and external factors. These factors represent each category are presented below:

2.1.5.1. Internal factors

The following factors are considered by a company when determining the working capital requirement for a particular period of time. Each variable is explained in details.

Nature of the business: The working capital requirement depends on the type of business the firm undertakes. Manufacturing and trading organizations hold more stock and have many trade debtors and in turn they may be funded by trade payables and short term debt. Therefore, the working capital requirement is is a lot. On the other hand, services organizations like a hotel or a restaurant have cash sales and hence and a small debt amount. As a result, the working capital of such companies be far less than a manufacturing firm. However, hotels and/or restaurants also cary food and drink stocks to enable them to do their business on a sustained manner.

Size of the business: small companies, especifically those which are just established, may not have adequate funds to finance their business as creditors do not lend to people or companies they do not trust without seeing their credit worthiness. As a result, small firms tend to maintain low levels of working capital. However, large firms with a massive turnover and profits look to build on the growth momentum and have substantial stock and debtors. Therefore, the large firms working capital requirements are generally huge.

Firms Production policy: Firms working capital requirement may be influenced by the firm's production policy. Generally, there are two extreme production policies: steady policy, where there is a steady capital need during the period. The other is seasonal policy, where the firms increase their production in the peak sales period. As a result, the working capital requirement becomes more in the period.

Firms credit policy: Some comapanies may allow only 15 days credit, while others may allow 60 days or more credit to its customers. The longer the credit period the more the amount of the working capital to pay their debts. When a company has a credit policy for a short period, cash

comes in and the firm may not run short of finance. Hence, the working capital requirement is less.

Growth and expansion of business : When the directors of a company decide to expand the business or when the business is growing organically, there is a greater need to fund fixed assets and and current assets. In this case the need for working capital is at the most. Stocks are bought in the intention of selling and trade credits are given on generous terms. Therefore, there is a growing need for working capital to sustain the business in the long run. There is a risk of over trading, in this case.

2.1.5.2. External factors

There are external factors against which managers do not any control. These factors are mainly determined by the environment of the company which operates.

Economic and business seasonal cycle: most firms experience fluctuations in demand, may be due to seasonality for their products and /or services. Such regularities in the business operations affect the working capital requirements. When there is a boom in the economy, generally, the demand for the product or the service increase and hence sales increases. As a result, it inevitably lead the firm's investment inventories, debtors and short term debts to increase. In this scenario, additional investment in productive fixed assets may be undertaken. The firm may usually take long term debt or retained earnings, if there is a cash balance to finance such fixed asset inventories. Where there is a slowing down economy, sales may reduce and as a result the firm may try to reduce their short term borrowing as stocks and the number of debtors may decrease.

Change in the technology: if the company is a manufacturing firm, better technology might fasten the production process and hence the reduce the cash operating cycle, as finished goods could be put improved finished products to the market fast. However, the initial investment cost of the technology may be high.

Taxation policy: A Taxation system of a country determines how much tax to be paid. If the countries business climate is investment friendly, there might be lower taxation rates and will not put a strain on the firm's ability to pay taxes. In most of the times, this is not the case. Some taxation regimes require tax to be paid up front, such as quarterly of firm's financial period. As a result, the firm may have to borrow a part of the sum to be paid for taxation, if the cash is tied up

by debtors. Taxes have a bearing in the management of working capital.

In conclusion, a firm's financial manager should be aware of the internal and external factors that can influence the company's working capital needs. He/she should prepare strategies to address these factors to manage the working capital.

2.1.6. Working capital components

2.1.6.1. Accounts receivable

When a company sells goods or services on credit, it records this as accounts receivable in the ledger and the balance sheet. Companies get cash within a given period that it provides to a customer, which is known as the credit period. Companies manage their receivables intimating the credit period to the buyer so that the buyer will know when to pay. Companies usually carry out a credit analysis to gauge who are paying on time and who are not. By receiving cash early, it could improve the company's life-blood that is the working capital. Collecting cash too early and not providing generous credit terms may hamper business sales in the long run as customers might turn to competitors to get the required goods. Another option to improve working capital and to get cash early is to sell and handover the trade receivables to a factoring company. The factoring company discounts the trade receivables to make a profit and return rest of the money to the company. There might be a slight risk when obtaining the factoring facility as such companies might treat the credit customers harshly when they don't pay on time. There by harming the trade relations with the company that have been given credit (Brealey et al, 2006).

2.1.6.2. Inventory management

Inventory or stocks are a crucial make-up of current assets. Manufacturing firms usually contain in their inventory: raw materials, works in progress or finished goods, whereas consultancy companies have no inventory. In most cases, it is a balancing to keep inventory for sales and having less inventory to improve working capital. When there are less stock the company may not meet the customers demand immediately. In this case, companies may lose their customers as it is difficult to make them wait until the products are manufactured. On the other hand, holding too much stock may cost the company by ting up working capital. The best way is to maintain low inventory levels as much as possible. The concept invented by Japan known as just in time is the best stock policy. The just in time keeps suppliers ready to supply goods or stocks when the need arises for organizations to satisfy their demand.

2.1.6.3. Cash management and short-term securities

Cash in the current asset section can have multiple uses. It can be used to buy stock, pay salaries and purchase and purchase fixed assets etc. It is safe for organizations to hold big amount of cash for companies cash needs as they do not have to raise an overdraft, call on stakeholders to put in additional capital or raise debt. Large amount of cash which is not used for buying stocks, to fund the expansion of business or to paydividends gives the company a lost opportunityto earn a return. This cash can be invested in a saving account, fixed deposit or government bonds. For example to earn an interest. A compony should prepare a forcast cash-flow and see whether they are not in need of cash, otherwise, after investing cash in securities it may be called on to buy stock or pay creditors. This leads to costs for a company in investing cash in securities, such as administrative time taken to inform the bank and get the money to the company and in some cases there might be a penality. Some large organizations, at the end of the day when they have a cash balance, theyinvest it in an overnight money market deposit accounts (MMDA's) which pays an interest rate. Other short term securities that companies can invest their liquid funds in government treasury bills, commercial papers, bonds, mutual funds, corporate notes and mortgage backed securities (Brealey et al, 2006).

2.1.6.3. Accounts payables management

Account payable is the liability that comes from creditsales and is posted as a sum receivable by the seller and account payable from the buyer. Most companies, specially retail and manufacturing buy goods on credit and record it as a liability that has to be paid. A company can extend its credit policy based on the relationship between the suppliers. However, it should be noted that it is a form of short term debt, effective management of which is important and a company should make sure suppliers are receiving the payment on time to make them satisfied.

Arnold (2008) said that buying goos on credit and then selling them on credit to customers is a cheaper form of finance than an organization taking a bank overdraft to finance credit sales. Goods purchased on credit are usually will be paid at a future date, this credit period is given by the seller. Businesses obtaining trade credit is regular norm, which has benefits such as debtors does not have to be financed by short term debt. If the creditor period is long the cash could be used to buy inventory for sales. Companies need to manage their forcasted cash-flow and pay the creditors when the amount fall. Paying on the creditors on time will enable a company to obtain

more credit from suppliers and other too, will be given on credit as the company's image and hence will prevent any legal action taken by creditors. A method to identify when the payable are due is to analyze past instances where howmuch ime was taken to pay creditors. Another method would be to take trade payable outstanding as at now divide it by credit sales and multiply in by the number of days. That will provide an indicator roughly how long it takes to pay the creditors.

2.1.7. Working capital policy

In simple terms working capital can be defined as current assets minus current liabilities. When a company is unable to manage current liabilities through its current assets liquidity problem arises. This can threaten the future existence of the company. On the other hand when there are excess cash in the cash, c company should invest in short term securities to enhance the wealth of the shareholders. Working capital policy can be mainly classified in three categories. They are defensive policy, aggressive policy and conservative policy.

2.1.7.1. Defensive policy

A defensive policy is where a company funds fixed assets and large part of its current assets from long term debt and equity. The financial accountant can plan with precision, for example, financing huge sum of inventory from a debenture loan (1 year). The company can have a large stock to meet customer demand as they fall due. Customers may not be disappointed or go to competitors for goods in this scenario as they can get the goods from the company's with vast stock. Inventory planned to be sold for in 60 days could be financed by a trade creditor who offers the company to pay he/she in 60 days' time. A delivery van could be financed by taking a debenture loan for 3 years. The defensive policy keeps the company in a comfortable zone as they would not push for stocks to be made into sales or debtors to pay up earlier as already this has been financed by long term funds. Therefore, profitability is reduced. Debt carries an interest cost and further reduces profitability. Firms who do not know the demand for their goods and merchandise would want to be shielded under the defensive policy. Under defensive policy high level of stock and trade debtors would be present.

This policy would have a long cash conversion cycle. However, there would hardly be a case where stocks debtors would be funded by a bank overdraft. The company will have to pay interest to the lender on the amount borrowed. By holding huge stocks, a company runs a risk of

obsolescence and incurring holding costs. This policy reduces the need to handle working capital proactively as the current assets are already funded with long term funding sources. The downside to this policy is that there are many cost involved which reduces profitability (Arnold, 2008).

2.1.7.2. Aggressive policy

The aggressive working capital policy is company's intention to fund its working capital through short term debt. This policy is though cheap because funds such as overdraft can be called upon when needed and the interest will be paid only when an overdraft is taken unlike long term debt where interest also has to be paid for the entire loaned amount for the year. Short term debt has to be settled within one year so there is less flexibility for a company. In aggressive working capital policy the whole amount of current assets are financed by short term debt. This policy will push the finance department to be proactive in the management of working capital always, as they need to sell stocks fast and collect receivables on a timely manner, in order to settle the short term debt on time. As the result this policy is very risky. If the business is in an expensive drive, boosting sales and profitability will be difficult under an aggressive policy as a short term debt will be insufficient to finance the increased stocks and receivables. Therefore, such a policy is risky. This policy is suited to firms which operate in a stable economic environment. The product has to be established and give a steady cash flow which will make cash forecasting easier and hence improve working capital management.

Generally, a company which follows aggressive working capital policy does not offer long credit period. It is normally one month credit period. On the other hand the inventory level will be to minimum, which will be based on the demand made by the customer. Just in time production will be in place for this type of economy. But it should be noted that it is a high risk strategy which offers high return to the company (Arnold, 2008).

2.1.7.3 Conservative policy

Some companies would want to adobt a mixture of the conservative working capital policy and the aggressive working capital policy. If they see a good reason that debtors will pay on time to settle trade creditors, then they will try to fit in the aggressive type of stock has not shown interest by customers yet, but keep promise in the future. Then the company would try the

conservative approach by taking a long term loan to buy and stock this item and hope that the promise materializes. It is important that some items of current assets and sub-catagories are studied properly to see which policy will suit which item and category.

By understanding and managing the current assets, the company could maximize its profitability and improve the liquidity. This policy will have the elements of the two policies described above and as a result will balance the firms profitability and risk.

Generally, aggressive working capital policy suits a company which has high sales or growth, this is because they are able to manage the cash flow issues funded by the sales growth. Whereas a company with unstable environment and with fickle sales will have to adobt the conservative policy because it cannot be certain about the cash materializing soon to pay the liabilities. An aggressive policy will cause the company financial angush. Hence, understanding the current assets and liabilities will inform the firm the best chice of working capital policy (Arnold, 2008).

2.1.8 Working capital management and profitability

2.1.8.1 Trade off between profitability and risk

Jose et al (1996) showed that day-to-day management of a firm's short term assets and liabilities play important role in the success of the firm. Firms with growing long term prospects and healthy bottom lines do not remain solvent without good liquidity management. Profitability is more important because profit can usually be turned into a liquid asset, and that liquidity is also important but does not mean that the company is profitable.

Gitman (1999), while acknowledging the relative importance of both, submits that liquidity is more important because it has to do with the immediate survival of the company. Profitability tells whether the business is sustainable while liquidity tells whether the business has enough cash to pay its obligations. He cited the examples of two computer companies, Gateway and dell. According to him, gateway survived years of losses because it was very liquid. Despite years of losses, it functioned because it had enough "liquid" to survive. Dell survived because it was profitable even though it had billions of dollars in debt. Therefore, he submits that both are important, and that neither measure alone can give picture of any company's ability to continue. However, he states that at some point, if a company does not gain profitability, it will fail.

For Gitman (1999) in addition to profitability, liquidity management is vital for ongoing concern.

Joese et al (1996) suggests optimum liquidity position, which is minimum level of liquidity necessary to support a given level of business activity. He says that it is critical to deploy resources between working capital and capital investment, because the return on investment is usually less than the return on working capital investment. Therefore, deploying resources on working capital as much as to maintain optimum liquidity position is necessary. Then he sets up the relationship between conversion cycle and minimum liquidity required such that the cycle lengthens, the minimum liquidity required increases, and vice versa.

2.1.8.2. Effects of the level of Current Assets on the Profitability-risk tradeoff

Evance Wiiam (2015) conducted a study on the impact of working capital management on profitability of listed cement companies in Tanzania cement company. He has observed that by minimizing amount of funds invested in current assets, firms can cutt-off unnecessary financing cost and profitably reserving aside funds for capital expenditures like expansion of manufacturing plant and equipment aiming to boost production of goods and services. Due to its importance in daily life, cement industry requires to maintain adequate working capital while conducting its day to day operations. Having inaducate working capital, it negatively affects firm's liquidity position not only that but also holding excess working capital results in the reduction of profitavility of these companies. Proper estimation of needed working capital is crucial for surviving of cement companies.

2.1.8.3 Increase in Current Assets to Total Assets ratio

There was a positive relationship between current assets to total assets ratio and return on assets is included here to demonstrate profitability. So, consequently, there is a positive relationship between current assets to total assets ratio to profitability. A higher value of this ratio escorts towards more profitability. If a firm invests more in fixed assets then it can generate more profits (Raheman et al, 2007).

2.1.8.4 Effects Current Liability on profitability-risk tradeoff

There was a negative relationship between current liability to total assets ratio and profitability. An increase in current liabilities to total assets ratio leads to less profitability (Raheman et al, 2007).

2.2 Empirical Review of Literature

Various studies have analized the relationship of working capital management (WCM) and firm profitability in various countries. The results are quite mixed, but a majority of studies concluded a negative relationship between WCM and firm profitability. The studies reviewed have used various variables to analyze the relationship with different methodology such as linear regression and panel data regression. This section presents the chronology of major studies related to this study in order to assess and identify the research gap.

Waweru (2011) carried out a study on the relationship between working capital management and the value of companies quoted at the NSE (Nairobi stock exchange). The study used secondary data obtained from annual reports and audited financial statements of companies listed on the NSE. A sample of 22 companies listed on the NSE for a period of seven years from 2003 to 2009 was studied. The average stock price was used to measure the value of the firm. The regrassion models indicated that there was some relationshipbetween working capital management and the firm's value while the result of the pearson correlation indicated a negative relationship between average cash collection period, inventory turnover in days, cash conversion cycle and the value of the firm.

Makori and Jangongo (2003) in their paper they analyzed the effect of working capital management firm's profitability in Kenya for the period 2003 to 2012. For this purpose, balanced pannel data of five manufacturing and construction firms each which are listed on the Nairobi Security Exchange (NSE) was used. The dependent variable, firm's profitability was measured by return on asset. With regard to independent variables, average collection period, inventory conversion period, average payment period and cash conversion cycle were used to measure working capital management. Pearson's correlation and oridinary least squares regression models were used to establish the relationship between working capital management and firm's profitability. The study found a negative relationship between profitability and number of day's accounts receivable and cash conversion cycle, but positive relationship between profitability and a number of days of inventory and numbers of days payable.

Yadav and Kumar (2014) studied the relationship between working capital management determinants on profitability. Profitability is a dependent variable whereas determinants of working capital are independent variables such as average collection period, inventory turnover

in days, average payment days, cash conversion cycle, and net trading cycle were used to assess working capital management and return on total assets. The study was considered sample of the size of ten large scale steel manufacturing companies in India over a ten year period from 2003 to 2013. The analysis was done by using OLS regression, shows whether there is a significant relationship between these variables. From the study, though it is evident that working capital management does not have a significant impact on profitability.

Lawal, Abiola, and Oyewole (2015) studied by taking six selected companies in Nigeria covering the period between 2006 and 2013 was used for the study. Purposive sampling techniques was adobted and data collection was analysed using pannel date least square method of working capital (ARP, APP and IHP) and profitability (ROI) it concluded that working capital management has significant imput on profitability and of manufacturing companies.

There are studies with reference to Ethiopia on working capital management and firm profitability, especially in the manufacturing sector. Tewodros (2010), studied the effect of management of working capital policies on firm's profitability by taking samples of 11 manufacturing private limited companies in Tigray region of Ethiopia for the period 2005-2009. The finding of descriptive statistics shows that on average cash conversion cycle takes 313 days and with minimum and maximum days of -315 and 2264 respectively. It also took an average 314 days to sell inventory. Firms wait an average 120 days to pay their purchases and receive payment against sales on an average of 118 days. The result shows that longer accounts receivable and inventory holding periods are associated with lower profitability. There is also negative relationship between accounts payable period and profitability measures. However, except for operating profit margin this relationship is not statistically significant. The results also show that there exists significant negative relationship between cash conversion cycle and profitability measures of the sampled firms. No significant relationship between current assets to total assets ratio and profitability measures has been observed. On the other hand, findings show that a highly significant positive relationship between current liabilities to total assets ratio and profitability. Finally, negative relationships between liquidity and profitability measures have aso been observed.

Mulualem (2010) studied impact of working capital management on firm's profitability on a sample of 13 manufacturing companies for the period of five years (2005-2009). The study was

employed satisfied sampling design based of nature and turnover of companies. The finding of descriptive statistics shows that on average cash conversion cycle takes 129 days and with minimum and maximum days of -25 and 343 respectively. It also took an average 97 days to sell inventory. Firms wait an average 104 days to pay their purchases and receive payment against sales on an average of 58 days. The result showed that there is statistical significance negative relationship between profitability and working capital management. Moreover, the study found out that there is strongly significant positive relationship between size and firm profitability and there is no statistically significance negative relationship between debt and firms profitability.

Ephrem (2011) examined the impact of working capital management on profitability of the selected small and medium enterprises which are found in Addis Ababa. He took sample of 30 small micro enterprises were selected from the two sub-cities of Addis Ababa namely Nifas-Silk-Lafto and Kirkos and analysis was done for five years (2005-2009). He also used Pearson's correlation regression analysis and pooled ordinary least squares for data analysis. The result indicated that cash conversion cycle and average collection period has negative impact on net operating profitability of a firm. Finally, he concluded that a good working capital management practices can boost the profitability of small businesses.

Tiring (2013) examined impact of working capital management on profitability of micro and small enterprises in Ethiopia for the case of Bahir Dar City Administration. The study had taken a sample 67 micro and small enterprises. Date for this study was collected from the financial statement of the enterprises listed in Bahir Dar City micro and small enterprises agency for the year 2011. The study applied Pearson's correlation and OLS regression with a cross-sectional analysis. The result showed that there is a strong positive relationship between numbers of days of accounts payable and enterprises profitability. However, number of days accounts receivable, number of days of inventory and cash conversion cycle have a significant negative impact on profitability.

Wubshet (2014) examined the impact of working capital management on firms performance by using sample of 11 metal manufacturing private limited companies in Addis Ababa, Ethiopia for the period of 2008 to 2012. The performance was measured in terms of profitability by return on total assets, and return on investment capital as dependent financial performance (profitability) variables. The results indicate the longer accounts receivable and inventory holding periods are

associated with lower profitability. The results also showed that there exists significant negative relationship between cash conversion cycle and profitability measures of the sampled firms. No significant relationship between cash conversion cycle, accounts receivable period, inventory conversion period and accounts payable period with return on investment capital has been observed. On the other hand, findings showed that a highly significant negative relationship between accounts receivable period, inventory conversion period and accounts payable period with return on asset. The results conclude that cash conversion cycle has significant negative relationship with return on asset.

Gul, Khan, Rehman (2013) researched the influence of working capital management (WCM) on performance of small and, medium enterprises (SMEs) in Pakistan. The duration of the study was 7 years (2006-2012). The data used in this study was taken from SMEDA, Karachi Stock Exchange, tax offices, company itself and Bloom Burgee Business week. The dependent variable of the study was return on assets (ROA) which was used as a proxy for profitability. Independent variables were Number of days accounts receivable (ACP), Number of days of inventory (INV), Cash conversion cycle (CCC) and number of days on accounts payable (APP). In Addition to these variables some other variables were used which included Firm Size (SIZE), Debt Ratio (DR) and Growth (GROWTH). The regression analysis was used to determine the relationship between WCM and performance of SMEs in Pakistan. The result suggested that APP, Growth and SIZE have positive relationship with profitability whereas ACP, INV, CCC and DR have inverse relation with profitability.

Oldipupo and Okafor (2013) examined the implication of firm's working capital management practice on its profitability and dividend payout ratio. The study focused on the extent of the effects of working capital management on the profitability and dividend payout ratio. Financial data were obtained from 12 manufacturing companies quoted on the Nigeria Stock Exchange over a period of 5 years (2002-2006). Using both the Pearson's product moment correlation techniques and ordinary least square (OLS) regression techniques, they observed that shorter net trade cycle and debt ratio promote high corporate profitability. While the level of leverage has negative significant impact on corporate profitability, the impacts of working capital management on corporate profitability appeared to be statistically significant at 5% confidence level. On the other hand, they observed that dividend payout ratio was influenced positively by profitability and net trade cycle, but negatively by growth rate in earnings.

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

Akoto, Awnyo-Vitor and Angmor (2013) analyzed the relationship between working capital management practices and profitability of listed manufacturing firms in Ghana. The study used data collection from annual reports of all the 13 listed manufacturing firms in Ghana covering the period (2005-2009). Using panel data methodology and regression analysis, study found out a significant negative relationship between profitability and accounts receivable days. However, the firm's cash conversion cycle, current asset ratio, size and current asset turnover significantly positively influence profitability. The study suggested that mangers can create value for their shareholders by creating incentives to reduce their accounts receivable to 30 days. It further recommended that enactment of local laws that protect indigenous firms and restrict the activities of importers and eminent to promote increased demand for locally manufactured goods both in the short and long runs in Ghana.

Omesa, Maniagi, Museiga and Makori (2013) examined the relationship between Working Capital Management and Corporate Performance of manufacturing firms listed on the Nairobi Security Exchange. A sample of 20 companies with 5 years (2007-2011) data was collected. To analyze the principal component (PCA) was used due to its simplicity and its capacity of extracting relevant information from confusing data sets. From the results using PAC and multiple regression, working capital proxies, cash conversion cycle (CCC), average collection period (ACP) and control variables current liabilities (CLTA), Net Working Capital Turnover Ratio (NSCA) and Fixed Financial Ratio (FATA) were significant at 95% confidence (p values are<0.05) to performance as measured by Return on Equity (ROE). Further, ACP was found to be negatively related to ROE while CCC, CLATA, NSCA and FATA.

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

Nyabwanga, Ojera, Lumumba, Odondo and Otieno (2012) assessed the effect of working capital management practices on the financial performance of SSEs in Kisii South District. A sample of 113 SSEs comprising 72 trading and 41 manufacturing enterprises was used. Pearson correlation coefficients and multiple regression analysis techniques were used to analyze data. Consequently, the finding of the study were that working capital management practices were low amongst SSEs as majority had not adopted formal working capital management routines and their financial performance was on a low average. The study also revealed that SSE financial performance was positively related to efficiency of cash management (ECM), efficiency of receivable management (ERM) and efficiency of inventory management (EIM).

Gakure, Cheluget, Onyango and Kraro (2012) analyzed the relationship between working capital management and performance of 15 manufacturing firms listed at the Nairobi NSE from 2006 to 2010 and for a total of 75 firms observations. They used secondary data from a sample of 18 companies at the NSE. A regression model was used to establish the relationship between the dependent variable and the independent variables. Pearson's correlation and regression analysis were used for the analysis. The results indicated that there is a strong negative relationship between firm's performance and liquidity of the firm. The study found out that there is a negative coefficient relationship between accounts collecting period, average payment period, inventory holding period and profitability while the cash conversion cycle was found to be positively correlated with profitability. However, the effects of the independent variables, except the average payment period were no statistically significant though the overall model was statistically significant.

Sharma and Kumar (2011) examined the effect of working capital on profitability of Indian

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

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

Mathuva (2010) in his study on the influence of working capital management on corporate profitability found that there exists a highly significant negative relationship between the time it takes for firms to collect cash from their customers and profitability. He explained that the more profitable firms take the shortest time to collect cash from the customers. The study further revealed that there exist a highly significant positive relationship between the inventory conversion period and profitability. It was explained that firms, which maintain sufficiently high inventory levels reduce costs of possible interruptions in the production process and a loss of business due to scarcity and products. Finally, the study established that there exists a highly significant positive relationship between the average payment period and profitability. He said that the longer a firm takes to pay its creditors, the more profitable it is. In this study, a sample of 30 firms listed on Nairobi Stock Exchange for the periods 1993 to 2008 was used.

Gill, Biger and Mathur (2010) analyzed the relationship between working capital management and profitability of 88 American firms listed on New York Stock Exchange for a period of 3 years (2005-2007) was selected. The data was analyzed using Pearson's Bivariate Correlation Analysis and weighted least squares (WLS) regression techniques. They found statistically

significant relationship between the cash conversion cycle and profitability, measured through gross operating profit. It followed that managers can create profits for their companies by handling correctly the cash conversion cycle and by keeping accounts receivables at an optimal level. Although studies on working capital management have been carried out by various scholars such as Gul, Khan, Rehman (2013); Oladipupoo and Okafor (2013); Ahmed (2013); Akoto, Awunyovitor and Angmor (2013); Omesa, Maniagi, Musiega, and Makori (2013); Maradi, Salehi and Arianpoor (2012); Gakure, Cheluget, Onyango and Keraro (2012); Sharma and Kumar (2010); Mathuva (2010); and Gill, Biger and Mathur (2010). It is instructive to note that there is still abiguity regarding the appropriate variables that might serve as proxis for working capital management. These studies do not provide clear-cut direction of the relationship between working capital management and its impact on the firm profitability in case of construction sectors in Ethiopia.

Weinraub and Visscher (1998) observed a tendency of construction firms with low levels of current ratios to also have low levels of current liabilities. Combining accounts receivable and payable into one issue is billed, Satoris, and Fergusen's (1984) fiding that payees define the date of payment as the date payment is received, while payers view payment as the postmark dte. Additional WCM insight across firms, industries, and times are neede.

Maness and Zietlow (2002) presented two models of value creation through effective short term financial management activities. Navon (1996) proposed a relationship between cash flow, cost flow, and expense flow. The cost flow is the projection of the project's cost function of time. In principle, to compile the cost flow for a project, the costs of each activity has to be distributed over its duration. Time lag is not taken into considerattion when cost flow is prepared. The money could have been paid before the activity is performed, that is used as a down payment or for the service provided. Alternatively the many may be paid later, upon completion of the credit period. In other words, the time when a resource is used on the site differs from when it is paid for. This difference is called the time lag and can be positive or negative depending on the mode of paiment. Kenley and Wilson (1989) found to have an excellent fit for the data for 80% of the projects analyzed and are useful for the post examination of a construction project's net cash flow. This model is very flexible and capable of adapting to a wide degree of inter-projec variability.

Raheman and Nasr (2007) conducted a study to analyze the relationship between WCM and profitability in case of Pakistan's firms. The result showed that there is a strong negative relationship between the variables of WCM and profitability of a firm. It means that as the cash conversion cycle increases, it will lead to decreasing profitability of the firm and managers can create positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level. There is a significant negative relationship between liquidity and profitability. It was also found that there is Journal of Commerce and Managemnt Thought 6-110 positive relationship between the size of the firm and its profitability as well as a significant relationship between debt used bythe firm and its profitablity.

Arditi etal. (2000) found budgetary and macroeconomic issues as the main reasons for construction company failure of construction contractors in Saudi Arabia and found that the most important factors were: difficulty in acquiring work, bad judjement, and lack of experience in the firm's line of work, difficulty with cash flow and lack of managerial experience.

Kivrak and Arslan (2008) examined the critical factors causing the failure of construction companies through a survey conducted among 40 small to medium sized Turkish construction companies. A lack of business experience and country's economic conditions was found to be the most influential factors to company failure. A security of the sub factors related to the lack of business experience confirms that difficulties with cash flow and poor relationship with the client drove the constructors' failure. Kangari (1988) found that more than half of business failures in construction were due to unrealistic profit margin. The construction sector is not capital intensive but working capital intensive according to Dagar (2008). The main aim of this resarch is to establish the relationships among the factors that contribute to working capital requirements. Therfore, the present study is an attempt to fill the gap and estimate the relationship between working capital management variables (Average collection Period, Inventory conversion period, Average Payment Period and Cash conversion Cycle) and firm profitability of construction firms in Ethiopia, specifically in Addis Ababa.

Padachi (2006) examined the trends in working capital management and its impact on firm's performance. The results proved that a high investment in inventories and receivables is associated with lower profitability. Further, he showed that inventory days and cash conversion cycle had positive relation with profitability.

Raheman and Nasr (2007) selected a sample of 94 Pakistani firms listed on Karachi Stock Exchange for a period of 6 years from 1999-2004 to study the effect of different variables of working capital management on the net operating profitability. From result of study, they showed that there was a negative relationship between variables of working capital management including the average collection period, inventory turnover in days, average collection period, cash conversion cycle and profitability. Besides, they also indicated that size of the firm, measured by natural logarithm of sales, and profitability had a positive relationship.

On the other hand, Rahman and Mohamed (2007) studied the effect of different variables of working capital management including average collection period, inventory turnover in days, average payment period, cash conversion cycle, and current ratio on the net operating profitability of Pakistani firms. They found that as the cash conversion cycle increases, it leads to decreasing profitability of the firm and managers can create a positive value for the shareholders by reducing the cash conversion cycle to a possible minimum level.

Therfore, this study differ from the other studies mention above are it is conducted on Grade construction company, the problem of working captial is also serious in many less developing countries specally in Ethiopia and there is no study carry out in the construction sector.

2.3 Konowelge gap

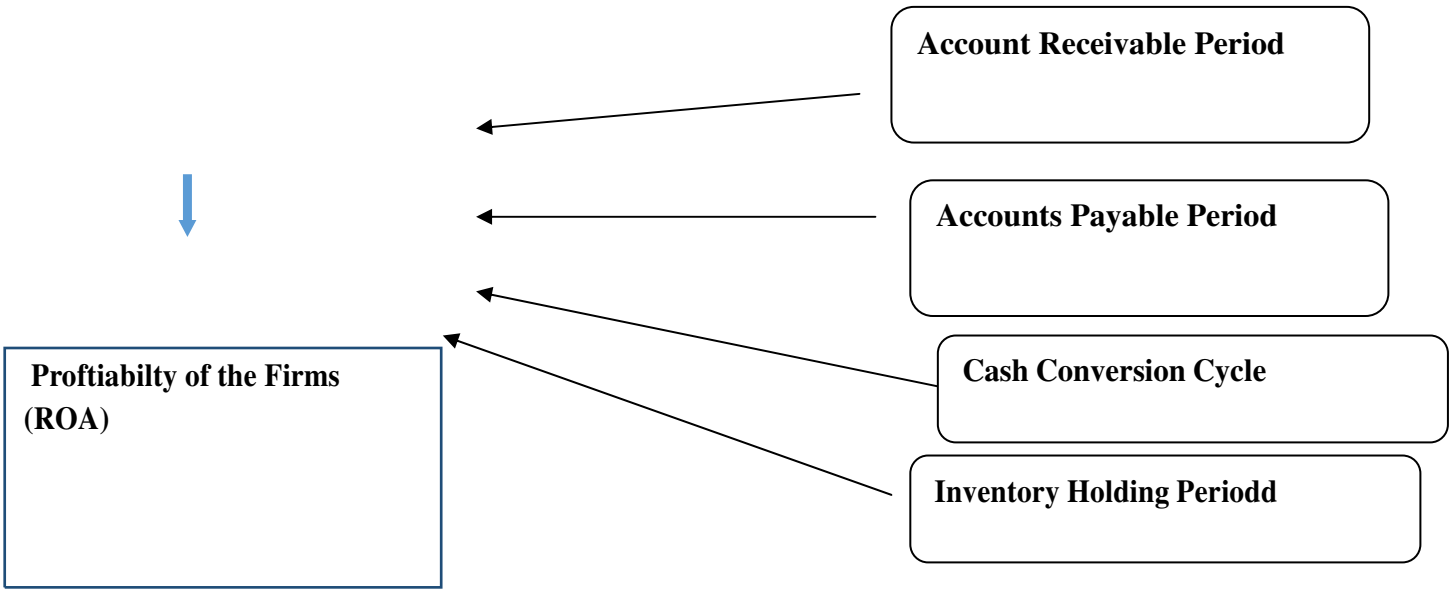
In Ethiopia, there many contractors are shortage working capital specially the domestic contractors. Due to the shortage finance, the contractor does not finish their works one time as the quality of services also poor. This problem interest the student researcher to conduct this study. According to the knowledge of the researcher, there was no study which has been conducted on construction companies in Ethiopia even though there are researches done in other sector. Hence, this study is conducted to fill the knowledge gap on effect of working capital management on profitability of grade one construction companies in Addis Ababa.

2.4. Conceptual Framework of the study

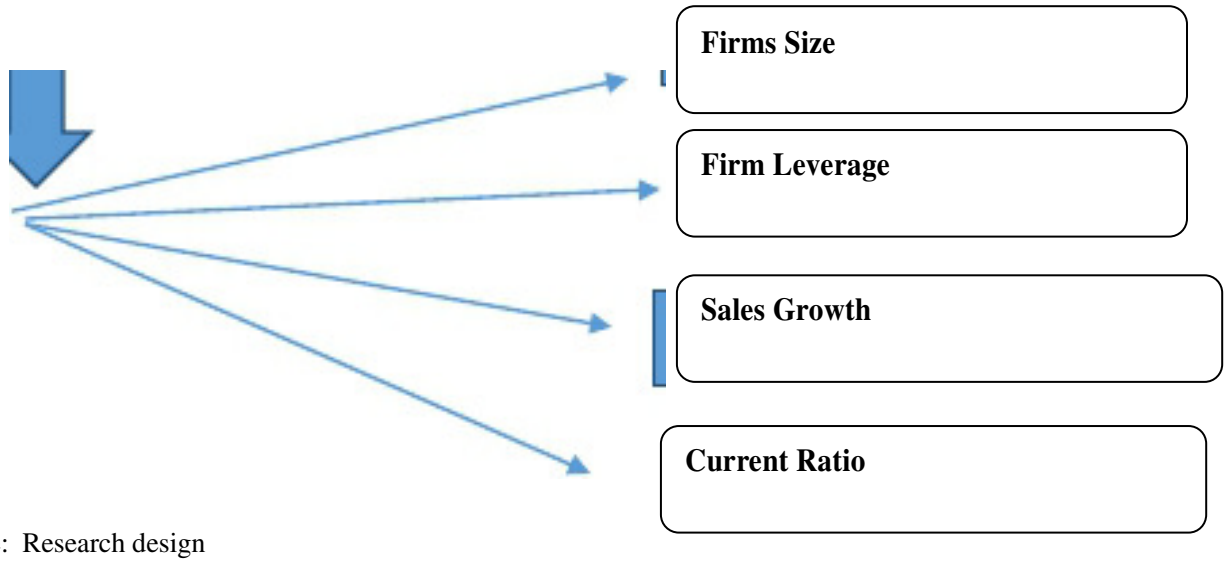
The following figure presents the conceptual framework of the relationship between working capital management measures and profitability of firms.

Dependent Variable

Independent Variable



Control Variables



Source: Research design

Chapter Three: Research Methodology

3.1. Introduction

This chapter introduces the method of data collection and analysis. The first part lays out the research hypthesis, which is based on previous studies, but do take into account the sample's uniqueness as it is collected from different companies and countries. The second part presents the data utilized, the variables and the method of analysis. This lays out the continuation of the research on chapter 4.

3.2 Research design

The study adopts the inferential research design. This type of research design is often uses in natural science but it is different in social sciences. In the social science researcher use a method of experiment in that type of research design. One group is subjected to experiment called independent variables while other is considered as control group called dependent variable. The result obtained by the comparison of both the two groups. Both have the cause and effect relationship between each other. Therefore, this study is concerned with the effects of working capital components on profitability. It aims at identifying the effect of working capital components, that is, the Average Collection Period (Sales Outstanding); Inventory Conversion Period (ICP); Average Payment (Payment Outstanding) and Cash Conversion Cycle (CCC) on profitability. Diagnostic research tries to determine the association of the subject matter with something else (Kothari, 2004). The design enables the researcher to identify the relationship that existed between the independent variables and the dependent variable. Examining data for the study required panel data analysis. Panel data (also known as longitudinal or cross sectional time-series data) is a dataset in which the behavior of entities is observed across time. Therefore

this analysis helps us to find out the relationships that existed among the variables under study over a given period (Huang et al, 2008). In addition, Stata Software version 12 was used to process and analyze the data collected.

3.3. Target Population

Population refers to all the members of a real or hypothetical set of people, events or objects to which we wish to generalize the results of our research. The target populations of this study are operational grade one construction companies. The population of this study included all private grade one construction companies in Ethiopia which are 119 in number.

3.4 Sample and Sampling Technique

The data sample was collected from the Ministry of urban Development, Housing and construction. The data includes private companies from the year 2011 to 2016.

To make the study manageable with time and cost constraint the random sampling methods were employed. Moreover, the random sampling method gives equal chance for all respondents being chosen in the sample.

The sample size for the study was determined by using the sample size determination table developed by Yamen, (1967) with precision level of ±7% is used. The sample covers only grade one construction companies in Addis Ababa. Among 119 level one construction companies the researcher analyzed 45 grade one construction companies.

3.5Source and procedure of data collection

In order to gather the data from relevant sources, the study used both primary and secondary data sources.

Primary data**:** are data originated by the researcher for the specific purpose of addressing the research problem. It is the researcher originally collects from the sample population. In this study the primary data were gathered from each grade one construction companies which are currently working with construction through self-designed questionnaire.

Secondary data: collected from review of journals, articles, company profile and financial reports, book and magazines.

3.7 Data Analysis and Presentation

The collected primary data have been analyzed using descriptive statistics, correlation and multiple regression analysis to establish the relationship between the independent variables of working capital components viz., DSO, DPO, ICP and CCC and the dependent variable (Gross Operating Profit). The descriptive statistics enables to describe (and compare) variables numerically by focusing on the central tendency and dispersion of the variables (Saunders et al., 2009). Accordingly, the descriptive statistics in terms of maximum, minimum, median, mean and standard deviation of the dependent, independent and control variables have been worked out and presented in a table. Correlation analysis, on the other hand, involves measuring the strength of a relationship between two variables. The Pearson Correlation Coefficient measures the

degree to which there is a linear association between two interval scaled variables. For this study, the Pearson Correlation Coefficient has been determined to measure the degree to which the dependent and independent variables are associated.

In addition to the descriptive statistics and correlation analysis, the study used multiple regression analysis. Regression analysis provides a tool that can quantify relationships between a dependent and one or more independent variable while at the same time it provides statistical control (Aaker et al., 2007). According to Kothari (2004), regression analysis is concerned with the study of how one or more variables affect changes in another variable.

3.7.1 Dependent Variable

Gross Operating Profit (GOP)

Gross operating profit (GOP) that is a measure of profitability of firm is used as dependent variable. It is defined as sales minus cost of goods sold, and divided by total assets minus financial assets. Hence, in this study, the general form of the multiple regression model given below has been used (Aaker et al., 2007):

$$GOP_{it} = \beta o + \sum_{i=1}^{n} \beta_1 X_{it} + \varepsilon$$

Where,

GOP_{it} = Gross operating profit of a firm i at time t; i = 1, 2, 3…, 13 firms.

Bo = the intercept of equation

X_{it} = the different independent variables (DSO, DPO, CCC & ICP) for WCM of firm ***i*** at time ***t***.

t = time from 1, 2…, 5 years and

ε = error term

3.7.2 Independent Variables and their Measurements

The working capital components include: Average Collection Period (Sales Outstanding); Inventory Conversion Period (ICP); Average Payment (Payment Outstanding) and Cash Conversion Cycle (CCC) on profitability.

Cash Conversion Cycle (CCC)

The Cash Conversion Cycle (CCC) used as a comprehensive measure of working capital management is another independent variable, and is measured by deducting Average Payment Period from Average Collection Period. To calculate CCC the researcher uses the following formula:

$$\textbf{Cash Conversion Cycle (CCC)} = \textbf{DSO} + \textbf{ICP} - \textbf{DPO}$$

Inventory Conversion Period (ICP)

It is average number of days to convert raw materials into finished products and then selling them to customers. Inventory period is calculated by dividing average inventory by average sales per day.

To calculate ICP:

$$\textbf{Inventory Conversion Period (ICP)} = \frac{\textit{Average Inventory x 365}}{\textit{Net Sales}}$$

Average Collection Period (Sales Outstanding)

The days sales outstanding calculation, also called the average collection period or days' sales in receivables, measures the number of days it takes a company to collect cash from its credit sales. This calculation shows the liquidity and efficiency of a company's collections department. In other words, it shows how well a company can collect cash from its customers. The sooner cash can be collected, the sooner this cash can be used for other operations. Both liquidity and cash flows increase with a lower day's sales outstanding measurement.

To Calculate:

$$\textbf{Days Sales Outstanding} = \frac{\textit{Account Receivabe x 365}}{\textit{Net sales}}$$

Average Payment (Payment Outstanding)

This is the number of days a company takes to pay off the accounts payable. The average of beginning and ending accounts payable are used to measure the average payment period (Deloof, 2003):

To calculate APP

$$Day's\ Payable\ Outstanding = \frac{Account\ Payable}{Net\ Purchase} x\ 365$$

3.8 Model specification

The study use Gross Operating Profit as its dependent variable and Average Collection Period (Sales Outstanding); Inventory Conversion Period (ICP); Average Payment (Payment Outstanding) and Cash Conversion Cycle (CCC) on profitability as explanatory variables. The model is mathematically be specified as follows:

Mode 1: $GOP_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 CR_{it} + \beta_3 DR_{it} + \beta_4 Size_{it} + B_5\ FATA_{it} + \varepsilon_t$

Model 2: $GOP_{it} = \beta_0 + \beta_1 ICP_{it} + \beta_2 CR_{it} + \beta_3 DR_{it} + \beta_4\ Size_{it} + B_5\ FATA_{it} + \varepsilon_t$

Model 3: $GOP_{it} = \beta_0 + \beta_1 ACP_{it} + \beta_2 CR_{it} + \beta_3 DR_{it} + \beta_4\ Size_{it} + B_5\ FATA_{it} + \varepsilon_t$

Model 4: $GOP_{it} = \beta_0 + \beta_1 APP_{it} + \beta_2 CR_{it} + \beta_3 DR_{it} + \beta_4\ Size_{it} + B_5\ FATA_{it} + \varepsilon_t$

Model 5: $GOP_{it} = \beta_0 + \beta_1 CCC_{it} + \beta_2 ICP_{it} + \beta_3 ACP_{it} + \beta_4\ APP_{it} + \beta_5 CR_{it} + \beta_6 DR_{it} + \beta_7\ Size_{it} + B_8$

$FATA_{it} + \varepsilon_t$

Where:

GOP= Gross Operating Profit

CCC= Cash Conversion Cycle
ICP = Inventory Conversion Period
SO= Average Collection (Sales Outstanding)
PO= Average Payment (Payment Outstanding)
CR= Current Ratio
DR= Debt Ratio
Size= Total Asset(Logarithm)
FATA= Financial Asset to Total Assets
and εi is an error term that captures other unobservable factors

Chapter Four: Data Analysis, Result Presentation and Discussion

4.1. Introduction

This chapter presents the results and analysis of the findings of the various indicators of performance of grade one construction companies in Ethiopia on the Impacts of working capital management on firms' profitability. The study selected Gross Operating Profit (GOP) as the measure of the firm's financial performance. On the other hand cash conversion cycle (CCC), inventory conversion period (ICP), Sales Outstanding (SO) and Payables Outstanding (PO) was used as the measure of working capital (or working capital variables) for the study. The approach adopted is first to present the outcomes of the different methods independently in this chapter. The results obtained under different methods are jointly analyzed in the subsequent chapter to address each research hypotheses. Empirical results from quantitative data analysis using Stata Software as well as presenting results from descriptive statistics, correlation matrix and regression results were used as the study's main statistical tools.

4.2. Descriptive Statistics Result

The descriptive statistics are presented for 45 company's year observations of construction grade one companies in Ethiopia for the period of 2011 - 2016. For both dependent and independent variables value of minimum, maximum, mean and standard deviation are presented on table 4.1 below.

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
GOP	45	0.35	0.56	0.455	0.14849
DSO	45	22.59	39.95	31.27	12.27537
ICP	45	104.88	125.19	115.035	14.36134
DPO	45	45.19	65.91	55.55	14.65125
CCC	45	82.28	99.23	90.755	11.98546
CR	45	1.01	3.01	2.01	1.41421
DR	45	0.43	0.56	0.495	0.09192
Size	45	2.64	3.16	2.9	0.3677
FATA	45	0.06	0.11	0.085	0.03536

Source: Stata Output from Secondary Data (2011 – 2016)

As it is displayed in table 4.1, the mean value of firms Gross operating Profit is 45.5 percent of total assets, and it deviates 14.85 percent. Its minimum value is 35 percent while the maximum is 56 percent. It means that value of the profitability can deviate from its mean to both sides by 14.85 percent.

The cash conversion cycle used as a proxy to check the efficiency in managing working capital is on average 91 days and standard deviation is 12 days. The minimum time taken by a company to convert its overall activity is 82 days and the maximum time taken by the firm for this purpose is 99 days. Firms receive payment against sales after an average of 31 days and standard deviation is 12 days. Minimum time taken by a company to collect cash from receivables is 23 days while the maximum time for this purpose is 40 days. It takes an average 115 days to sell inventory with standard deviation of 14 days. Here, maximum time taken by a company is 125 days, and the minimum to convert inventory into sales is 105 days. Firms wait an average 56 days to pay their purchases with standard deviation of 15 days. Here, minimum time taken by a company is 45 days, and maximum time taken for this purpose is 66 days.

4.3. Correlation Matrix Result

After descriptive statistics and before regression analysis result, it is important to check the correlation between different variables on which the analysis is built. Pearson's Correlation matrix is used for data to see the relationship between variables such as those between working capital management and firm financial performance (GOP).

Table: 4.2, below presents the result of the correlation analysis of Profitability Measures with cash conversion cycle, inventory conversion period, sales outstanding and payable outstanding period. It shows negative relationship between the Pearson's Correlation Coefficient Matrix and GOP with DPO, ICP, DR, and DSO at 5%. Furthermore, it shows the positive relationship with FATA, CR, LOS and CCC.

Table 4.2: Pearson's Correlation Coefficient Matrix

	CCC	CCC	ICP	DPO	DSO	CR	Size	FATA	DR	GOP
CCC	Pearson Correlation	1								
ICP	Pearson Correlation	.677								
DPO	Pearson Correlation	-.435	-.022	1						
DSO	Pearson Correlation	.127	-.174	.576	1					
CR	Pearson Correlation	-.060	-.173	-.014	.085	1				
LOS	Pearson Correlation	-.312	-.581	.500	.758*	.535	1			
FATA	Pearson Correlation	.199	-.114	-.351	-.013	.031	-.099	1		
DR	Pearson Correlation	.107	.520	-.108	-.522	.283	-.402	-.490	1	
GOP	Pearson Correlation	.210	-.301	-.545	-.022	.378	.244	.434	-.278	1

Correlation is significant at the 0.05 level (2-tailed).

Source: Stata Output from Secondary Data

Table: 4.2 presents the result of the correlation analysis of Profitability Measures with cash conversion cycle, inventory holding period, account receivable conversion period and accounts payable period.

The analysis starts with cash conversion cycle which is a comprehensive measure of working capital and gross operating profit. In the methodology part of this study, it was hypostasized that, cash conversion cycle (CCC) has no statistically significant relation with firms' financial profitability. In agreement with the research hypothesis, and based on table 4.3 result even if there is positive correlation coefficient between cash conversion cycle and gross operating profit, there is no statistically significant relation between CCC and gross operating profit. Because, at the point the correlation coefficient of cash conversion cycle with gross operating profit is 0.210, the p value is (0.560). Mean, it is statistically insignificant at ά. = 5%.

On the other hand, at its clearly shown result of in the table the Correlation results between

inventory conversion period, days sales outstanding period and days payable outstanding period with gross operating profit have negative result. It shows that any increase in any of these factors will reduce the profitability measure gross operating profit of the firms.

Regarding the hypothesis we stated in the methodology part of this study about Inventory, it was hypothesized that there is no statistically significant relation between Inventory conversion period and gross operating profit. In agreement with this hypothesis, the correlation table indicates that the at the result of correlation coefficients -0.301 and p value is (0.398). It shows that it is statistically insignificant at ά. = 5%.

Similarly in the chapter one of this study, it was hypothesized that there is no statistically significant relationship between payable outstanding profitability (measured by gross operating profit). Similar to the research hypothesis, the correlation matrix in the above table even if it has a negative relationship between payable outstanding and profitability measures. Which means if firms delay their payments they will earn less profits; the reason behind this is that firms can take the advantage of discounts by paying soon. But, as it is shown in the above table, when a payable outstanding correlation coefficients result is -0.545, the p value became (0.103). It means there is no statistically significant relationship between PO and GOP at ά. = 5%.

Finally, the other hypothesis was that, the way how credit sales are managed has effect on profitability of firms measured by gross operating profit. In agreement with the study hypothesis, the result of the correlation matrix table 4.2 shows that there is no statistically significant relationship between day's sales outstanding and measure of profitability (gross operating Profit). Even if the Pearson correlation between day's sales outstanding and measure of profitability is negative, i.e. -0.22, the p value is 0.951. That is really far from the default alpha value 5%.

Current ratio is a traditional measure of checking liquidity of the firm. In this analysis the current ratio has no significant but positive relationship with measurement of profitability of the firms. The coefficient is 0.378 and p-value of (0.281) with gross operating profit.

Also, even if there is a positive correlation exists between measure of profitability (GOP) and LOS (the measures of size), there is no significant relation between size of the firm and profitability. The coefficient is positive 0.244; with p-value of (0.497).

In agreement with the research hypothesis, the results of correlation analysis indicate that there is

no statistically significant relationship between working capital management and performance of grade one contractors in Ethiopia. In general, the overall correlations test results imply that the null hypotheses for Gross Operating profit (GOP) are confirmed as there is no statistically significant correlations between Working Capital components (i.e. cash conversion cycle, inventory conversion period, Account receivable period and Account payable period) and firm's profitability.

4.4 Regression Results

The previous section shows that some components of working capital correlate with company profitability. The weak side of the above section is that they do not allow identifying causes from consequences. To overcome this shortcoming, the researcher conducted regression analysis to determine how much of each of the variables of working capital impact on profitability. The results are presented below for each variable on the tables.

When more than two variables are involved it is often called multicollinearity. The primary concern is that as the degree of multicollinearity increases, the regression model estimates of the coefficients become unstable and the standard errors for the coefficients can get wildly inflated. To avoid the possibility of multicollinearity, it is important that the results from collinearity diagnostics should have tolerance value above 0.10 and variance inflation factor (VIF), which is the inverse of the tolerance value, less than 10 as the small value of tolerance indicate the high multiple correlation with other variables (Pallant, 2007).

The value of F test explains the overall significance of a model. It explains the significance of the relationship between dependent variables and all the other independent variables (Anderson et al., 2007).

In the case of a small sample, the adjusted R^2 Value should be considered as it provides more accurate estimation of the true population value (Pallant, 2007, p.158). There is a rule of thumb which can be used to determine the adjust R^2 value as follows: < 0.1: poor fit, 0.11 to 0.30: modest fit, 0.31 to 0.50: moderate fit, >0.50: strong fit (Muijs, 2004,).

To evaluate the study models, the value of R^2 has been considered to determine the amount of variance in the dependent variables which is explained by all variables in the formula (Pallant, 2007).

As the B coefficients have different scales, the absolute value of Beta parameter under Standardized Coefficients is used in order to compare and determine the influence of independent variables on the dependent variable (Muijs, 2004). The Significant value is used to measure the statistic significant unique contribution of each independent variable to the formula (Pallant, 2007). According to (Kohler, 1994), the values of Durbin Watson have upper limit of four and lower limit of zero. If the value of Durbin-Watson is equal to two then there exists no autocorrelation but if the value is less than two then there exists positive correlation and if the value is higher than 2 than there exist negative correlation.

From the analysis Table 4.3, CCC has a positive association with GOP but at 5% significant level the *results that reject null hypothesis GOP statistically related with CCC.*

In order to test the hypotheses, pooled OLS regression analysis has been conducted to determine the whether there is significant relationship between working capital management and profitability.

The following tables provide results for the models tested in the present study. In order to check the presence of autocorrelation and multicollinearity in the data, Durbin Watson (D-W) and Variance Inflation Factor (VIF) statistics was analyzed respectively.

It is evident that the statistics are within the limit, leading to the conclusion that there is no presence of autocorrelation and multicollinearity in the data. The highest value of VIF statistics obtained is 2.218 whereas a commonly given rule of thumb is that VIF's of 10 or higher may be a reason for concern (Gujarati, 2008). D-W statistics value was found to be 1.137 in model 2, which was highest in all five models. Durbin-Watson statistic ranges in value from 0 to 4 with an ideal value of 2 indicating that errors are not correlated, although values from 1.75 to 2.25 may be considered acceptable. Further some authors (Makridakis & Wheelwright, 1978) consider D-W value between 1.5 and 2.5 as acceptable level indicating no presence of collinearity.

Table 4.3: Regression Result from Cash Conversion Cycle Model Summary

Model	R Square	Adjusted R Square	Change Statistics	Durbin-Watson
			Sig. F Change	
1	.739	.68	.795	1.848

a. Predictors: (Constant), FATA, CR, CCC, LOS, DR

b. Dependent Variable: GOP

Coefficients

Model 1	Coefficients	SE	P>t	Collinearity Statistics	
				Tolerance	VIF
(Const ant)		0.670	0.576		
CCC	-0.005	0.08	0.08	0.862	01.160
CR	0.002	0.892	0.722	0.175	5.727
DR	-0.271	-0.685	0.000	0.019	7.272
Size	0.025	-0.398	0.711	0.019	7.114
FATA	-0.011	-0.016	0.988	0.272	3.670

Dependent Variable: GOP

The Tolerance statistics were 0.862 and the Variance Inflation Factor (VIF) 1.160 for CCC. It is indicating that there were no multi-collinearity problems among the independent variables in the data.

Model 1 tests the hypothesis that there is a significant relationship between Cash Conversion Cycle and profitability. The regression coefficient indicates a significant and negative relation between CCC and GoP and the alternative hypothesis is rejected and is concluded that CCC is statistically significant ($p<0.1$). This supports the notion that the cash conversion cycle is negatively related with profitability. Shin and Soenen (1998) argued that the negative relation between profits and the cash conversion cycle could be explained by the market power or the market share, i.e., a shorter CCC because of bargaining power by the suppliers and/or the customers as well as higher profitability due to market dominance. The other variables in the model are also statistically significant except current ratio.

The adjusted R^2, otherwise known as the coefficient of multiple determinations is the percent of the variance in the dependent explained uniquely or jointly by the independent variables. The R^2 and Adjusted R^2 are 74% and 68% respectively which shows there is strong evidence that the

variation in the dependent variable is being explained by the variation in the independent variables of the model.

Table 4.4. Regression Result from Inventory Conversion Period Model Summary

Model	R^2	Adjusted Square	Change Statistics	Durbin Watson	
				Sig. F.change	
2	0.81	0.74	0.736		1.892

a. Predictors: (Constant), FATA, CR, ICP, LOS, DR

b. Dependent Variable: GOP

Coefficients

Model		Coefficients	SE	P>t	Collinearity Statistics	
					Tolerance	VIF
2	(Constant)	0.459	0.797	0.001		
	ICP	0.001	-0.249	0.000	0.557	1.796
	CR	0.008	0.863	0.067	0.173	5.792
	DR	-0.288	0.575	0.000	0.128	7.835
	Size	0.040	-0.492	0.000	0.142	7.058
	FATA	0.042	0.056	0.958	0.272	3.676

Dependent Variable: GOP

From the analysis table 4.4.2 showed above, Model 2 tests the hypothesis that there is a significant relationship between Inventory Conversion Period and profitability GoP. The regression result shows a significant positive relation between GoP and ICP (p-value = 0.000). Thus, the alternative hypothesis is rejected and is concluded that ICP is statistically significant ($p<0.01$). This means that there exists a positive relationship between the ICP and profitability. This finding is consistent with studies carried out on conservative working capital policies

(Mathuva, 2010). This means that maintaining high inventory levels reduces the cost of possible interruptions in the production process and the loss of business due to scarcity of products. Maintaining high levels of inventories also helps in reducing the cost of supplying the products and protects the firm against price fluctuations as a result of adverse macroeconomic factors as observed by Blinder and Maccirri (1991).

The Adjusted R^2 0.74 indicates that the formula is strongly fit, well at predicting the Inventory conversion period and. The Tolerance statistics were 0.557 and the Variance Inflation Factor (VIF) 1.796 for ICP. It is indicating that there were no multi-collinearity problems among the independent variables in the data. The Durbin-Watson (DW) result is 1.892. Thus, it can be concluded that there is no autocorrelation exist. Therefore, the independences of residuals assumption are satisfied.

Table 4.5: Regression Result from Sales Outstanding

Model Summary

Model	R Square	AdjustedR Square	Change Statistics	DurbinWatson
			F Change	
3	0 .636	0.57	0.618	1.687

a. Predictors: (Constant), FATA, DSO, CR, DR, LOS

b. Dependent Variable: GOP

Coefficients[a] Model Unstandardized Coefficients

Model		Coefficients	SE	P>t	Collinearity Statistics	
					Tolerance	VIF
3	(Constant)	0.36	0.395	0.05		
	ACP	-0.038	-0.511	0.894	0.240	4.169
	CR	0.003	0.456	0.468	0.116	58.584

	DR	-0.289	-0.466	0.000	0.121	8.236
	SIZE	0.036	0.059	0.000	0.064	15.538
	FATA	0.176	0.227	0.832	0.234	4.274

a. Dependent Variable: GOP

The Tolerance statistics were 0.240 and the Variance Inflation Factor (VIF) 4.169 for DSO. It is indicating that there were no multi-collinearity problems among the independent variables in the data.

Model 3 which is presented in the above table tests the hypothesis that there is no significant relationship between Sales outstanding and profitability. The regression results indicates that the coefficient of Sales outstanding is negative with -0.038, but it is not significantly different from zero (p-value = 0.894). Thus, the null hypothesis is not rejected and is concluded that Sales outstanding is not statistically significant at 1% significance level (p>0.01). This suggests that, though short Sales outstanding are good for explaining the financial success of listed construction sectors. It is a critical factor to consider when taking decision to improve profitability. The result is consistent with Raheman and et al (2010); and Sharma and Kumar (2011) but significantly differs from those conducted by Gakure and et al (2012); Mathuva (2010); and Filbeck, et al. (2005) which found a significant relationship between average collection period and profitability.

Regarding the goodness of fit, the Adjusted R^2 is 57% indicates that the formula is strongly fit, at predicting the sales outstanding. The Durbin-Watson (DW) results show that 1.687 of GOP and will have negative correlation, since the result is less than two.

Table 4.6 Regression Result from Payable Outstanding

Model Summary

Model	R Square	Adjusted R Square	Change Statistics	Durbin-Watson
			Fig F Change	
4	0 .64	0.6	0.291	1.879

a. Predictors: (Constant), FATA, CR, DPO, DR, LOS

b. Dependent Variable: GOP

Coefficients

Model		Coefficients	SE	P>t	Collinearity Statistics	
					Tolerance	VIF
4	(Constant)	-0.166	0.094	0.17		
	APP	0.001	-1.969	0.000	0.446	2.242
	CR	0.002	-0.067	0.51	0.120	8.326
	DR	-0.271	0.084	0.000	0.108	9.233
	SIZE	0.020	0.769	0.000	0.084	11.890
	FATA	0.257	0.476	0.659	0.261	3.824

a. Dependent Variable: GOP

The Tolerance statistics were 0.446 and the Variance Inflation Factor (VIF) 2.242 for days payable outstanding. It shows that there were no multi-collinearity problems among the independent variables in the data.

The above table tests the hypothesis that there is a significant relationship between Average Payment Period and Profitability. The coefficient of APP shows a very significant positive relation between GoP and APP. The alternative hypothesis is rejected and is concluded that APP is statistically significant ($p<0.01$). This suggests that, an increase in the number of day's accounts payable by 1 day is associated with an increase in profitability. Contrary to Deloof (2003), Sharma and Kumar (2011) and Padachi (2006), this finding holds that more profitable firms wait longer to pay their bills. This implies that they withhold their payment to suppliers so as to take advantage of the cash available for their working capital needs.

Table 4.6: Regression Result from Payable Outstanding

Model Summary[b]

Model	R Square	Adjusted R Square	Change Statistics	DurbinWatson
			Fig F Change	
5	0 .849	0.793	0.291	1.994

a. Predictors: (Constant), FATA, CR, DPO, DR, LOS

b. Dependent Variable: GOP

Coefficients[a]

Model		Coefficients	SE	P>t	Collinearity Statistics	
					Tolerance	VIF
5	(Constant)	0.115	0.094	0.440		
	ACP	-0.0003	-1.969	0.130	0.446	2.242
	CR	0.004	-0.067	0.319	0.120	8.326
	DR	-0.256	-0.084	0.000	0.108	9.233
	SIZE	0.017	0.769	0.060	0.084	11.890
	FATA	0.054	0.476	0.0639	0.261	3.824

Dependent Variable: GOP

Model 5 acts as a control model for the variables under study. The model was run so as to provide an indicator as to the most significant variables affecting the study. The model shows that all the variables included are highly significant at 1% level with an exception of firm size (significant at 10%) and ACP, ICP and CR which are not significant. In this model, the ACP and the DR are negatively related with the firm's profitability while all the other variables exhibit a positive relationship. The model's adjusted R^2 is 79.3%.

4.5. Analysis of the Empirical Data

Once we saw the result of each variable now let's we proceed to analyze and discuss it. Here, we analyze the empirical data, interpret and discuss the empirical results. Furthermore compare the empirical finding with the theory and evidence from previous empirical studies. The hypotheses (HP) were developed.

H1: There is negative relationship between Sales Outstanding *on profitability*

H2: Inventory Conversion Period and Profitability are postively related

H3: Payment Outstanding has negatively effect on Profitability

H4: The is negative relationship between the Cash Conversion Cycle and Profitability

Based on the formulated hypotheses each variable explained in the next sub topics

4.5.1. Inventory Conversion Period

The study finds out that there is statistically significant and positive relation between inventory conversion period and gross operating profits of the assessed firms. Holding inventories incurs costs to the firm, such as the funds which are tied up in inventories, cannot have the interest earnings. Instead, storage and insurance costs have to be paid, furthermore, spoilage, damage and loss of goods lead to the costs to firms. The findings were consistent with those of Roumiantsev and Netessine (2005b) who find a relationship between return on assets and inventory levels associated with the speed of change/responsiveness in inventory management.

Roumiantsev and Netessine (2007) also reported that the relationship both between days of work in process inventory and ROI and between days of finished goods inventory and ROI is statistically significant. However, they contradict the findings of Chen et al. (2005, 2007) who reported that firms with abnormally high inventories have abnormally poor long-term stock returns and Gaur et al. (2005) who equally reported that inventory turnover for retailing firms is positively associated with both capital intensity and sales surprise, and is negatively associated with gross margins. Hyder et al. (2007); Raheman and Nasr (2007) have also reported a negative relationship between Inventory period and profitability.

Inventories are the core of construction companies and the companies might have to maintain the sufficient inventory level to avoid either the stock-outs or the excess balance. They require raw

material and work-in-process for their buildings which affect them to have higher inventory balance and longer inventory period. On the other hand, the excess balance would also cost the company such as loss of benefit from short-term investment, having long outstanding stocks and obsolete inventories. In addition, Since Construction sector process a bit complicated, the company require efficient inventory management, supply chain management, procurement and production. Without these systems, the companies may unable to manage their inventory (raw material, work in process and finished goods) effectively which result in high inventory balance and long inventory period.

4.5.2. Sales Outstanding

In the literature of working capital, research findings indicated that, days sales outstanding is related with profitability of firms both positively and negatively, (Dong and tyh-tay-su, 2010; E. Organdie, 2012 and Padachi, 2006). The empirical result of the study shows that there is a negatively relation between the GOP and DSO, but it is insignificant. This result is consistent with the findings from previous studies conducted by (Ganesan, 2007; Lazaridis and Tryfonidis, 2006 &Deloof, 2003) that provide the evidence of the negative relation between GOP.

The implication of the result is that, the increase or decrease in days sales outstanding will have negative relationship with profitability of the firms, but it is insignificant. It means that the shorter the firm's days sales outstanding, the higher will be the profitability and vice versa.

4.5.3. Payable Outstanding

The results from regressions model suggests that there is a positive relation between the GOP and PO and it is also significant. This finding is consistent with studies by (Usama, 2012; Raheman and Nasr, 2007) indicated a positive relationship between PO and Profitability of firms.

A positive significant relationship between accounts payable period and profitability can be explained by the increased availability of funds caused by the delayed payment of accounts payable. Such funds can thus be used for productive purposes that can increase profitability.

4.5.4. Cash Conversion Cycle

Here, the empirical result of the table suggests there is statistically significant but negative coefficient relation between the Gross Operating Profit and cash conversion cycle; which is similar to the results found in the prior studies of (Falope and Ajilore, 2009; Mohamad and Saad,

2010; Rahman and Mohamed, 2007) found strong negative relationship between cash conversion cycle as a measure of working capital management and firms profitability. But it is in contrast with the studies, (Deloof 2003; Padachi, 2006; Hasan, et al.,2011; Lazaridis&Tryfonidis; 2006) Considering the components of the cash conversion cycle (i.e., inventory period, accounts receivable period or accounts payable period) the positive result with cash conversion cycle points out that an increase in profitability is associated with a higher in the cash conversion cycle. It shows that the profitable companies tend to have the higher cash conversion cycle which indicates to efficient working capital management. This might be affected by either inventory period, accounts receivable period or accounts payable period.

4.6 Summary of Findings

According the result of the analysis, the summary of the finding indicate as follows

- Inventory Conversion Period has positive relation with gross operating profits of the assessed firms and statistically significant.
- Sales Outstanding is a negatively relation with the GOP and DSO, but it is insignificant. This result is consistent with the findings from previous studies conducted by (Ganesan, 2007; Lazaridis and Tryfonidis, 2006 &Deloof, 2003)
- Payable Outstanding has positive relationship with the GOP and it is also significant. This finding is consistent with the finding of some prior researches such as (Abbasali etal, 2012) Lazaridis and Tryfonidis, 2006) who concluded, there is a positive relationship between those two variables.
- Cash Conversion Cycle is statistically significant and has negative coefficient relation with the Gross Operating Profit; which is similar to the results found in the prior studies (Deloof 2003; Padachi, 2006; Hasan, et al.,2011; Lazaridis&Tryfonidis; 2006).
- Company size is found to affect the Gross profit of a company positively and this relationship is also statistically significant. It implies most larger firms tend to earn higher Gross Profit and the revised holds true.
- Debit ratio exists to affect the gross profit of companies negatively and this

association between the variables debit ratio and gross profit is statistically significant.

- Credit ratio has positive effect on the Gross profit but this effect is not significant.

CHAPTER FIVE: Conclusions and Recommendations

The basic intent of this chapter is to present the overall overviews of the research by summing the main findings of the analysis part and give future research directions. Therefore, this chapter has three main topics that are conclusion about the findings, recommendations and the other is suggestion for the future research direction from the researcher about the study.

5.1. Conclusions

The study used four measures of working capital to test whether working capital management has statistically significant effect on profitability. In agreement with the hypothesis of the study, the above findings indicated clearly that one of the measures cash conversion cycle and debit ratio in the research have negative sign of coefficient and significant relation effect with profitability of grade one contractors in Ethiopia. These conclude the debit and cash availability are essential element that affect the working capital for grade one contractor.

Notwithstanding the variables company size in the study have positive coefficient and statistically significant effect on profitability of grade one contractor in Ethiopia. This indicates the company size is important variable which affect the working capital because big companies engaged on different projects. The control independent variables that are credit ratio and financial to total asset ration also have similar result with the above variables.

The conclusion indicates that managers of construction companies employ efficient and effective working capital management practices to ensure the survival of the business. Also the study observes that the positive relationship between company size and profitability may be due to that, higher gross operating profit is associated with an increase in the company size. Also, the result of negative relationship between days sales outstanding and profitability may be due to that, lower gross operating profit is associated with inability to reinvest the cash in the organization.

Generally, this empirical study concluded that there are variables that have significant relationship with profit which strong influence or impact of working capital management on profitability of grade one construction in Ethiopia, when it is measured by the number of days credit sales are outstanding, the number of day's payables are outstanding, the number of days inventory are held, and the cash conversion cycle-CCC), on profitability measured by gross operating profit of grade one contractors in Ethiopia using financial data for the past five years period (2011 – 2016).

5.2 Recommendations

The study recommends that grade one construction companies should adopt efficient and effective working capital management policies to keep working capital at optimal level. The statistically significant relationship result of this study, the working capital management of Construction companies in Ethiopia has been effective and efficient. Nevertheless, the researcher recommends that there will be other factors and the involvement of additional grade one construction in the study might give us different results and, hence, conclusion.

Otherwise, based on the result of the study the recommendations of the research were premised as follows:

1. The researcher recommended that inventories are used to provide moderately so that the purchasing, production, and sales functions can proceeds at their own optimum paces. Further, Construction companies in Ethiopia operational departments should have create strong linkage and communications so as to feed each other in their firms' operations and minimize costs.

2. Constructors should develop an explicit procedure for collecting theirs receivables. In following its collection procedures the circumstance handling good customers and be competitive in the market should take into consideration, considering the current high competition of construction in Ethiopia with foreign companies. Otherwise, the firms may not be able to survive in the market at all.

3. The researcher recommended that even if let payment have its own advantage to increase the profitability of the firm, contactors have to pay their debts on time that not losing their venders in the long run.

4. The researcher recommended that lowering working capital cycle as a measure of efficient working capital management is the one to be appraised. This means that Investment in working capital could be optimized and cash flows could be improved by reducing the time frame of the physical flow from receipt of raw material to shipment of finished goods, i.e. inventory management, and by improving the terms on which firm sells goods as well as receipt of cash.

In general, the results of the correlation and the regression model of the study suggest that grade contactors should reduce the number of days of credit sales, payable period and inventory to improve their profitability.

5.3. Suggestions for Further Research

The study is incorporate sample grade one contactors found in Ethiopia. The variables enclosed to two types of variables: profitability, and variables which are specific to the firm and/or general to the economy as a whole and clearly pinpointed in the methodology part. At last the methodology will be limited to quantitative method with diagnostic statistics, correlation and econometrics analysis tools.

This research tried to meet the gap between the existing literatures but it also has its own limitations and those limitations can be addressed by other researchers in the future. For instance this research observes few construction companies exposure for the purpose of this study. Also, the findings of this study could only be generalized to grade construction companies those that were included in this research. Further, the researcher used one measure to measure the profitability of a firms' i.e. gross operating profits. However, there are lots of measures of profitability (return on asset (ROA), return on asset (ROI)). Consequently, the results can differ from this study by the use of different measures of profitability and working capital management.

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Annex

No.	Contractor Name	Category	Tel.
1	3M Engineering & Construction PLC	BC-1	0911 211050
2	AB Construction Plc	GC-1	0911193069
3	Adam Construction (Samuel Bogale)	BC-1	0911 202889
4	Afro Tsion Construction P.L.C. (Sisay Desta G/Yesus)	GC-1	0116-632150
5	Aser Construction plc	GC-1	011-2-15-2260
6	Bamacon Engineering P.L.C.	BC-1	011 6261335
7	Beaeka General Business PLC	GC-1	0911 208875
8	Bereket Endashaw Building Contractor	BC-1	0911 205480
9	Berhan Tobiaw Mareye	BC-1	0911 402545
10	Bermog Construction PLC	GC-1	0116-610417
11	Betel Construction plc	GC-1	011-4-55-6031
12	Bright Construction PLC	BC-1	0911 211161
13	Capstone Engineering	BC-1	0911 512423
14	Cobalt Construction PLC	BC-1	0911 208847
15	Dugda Construction PLC	BC-1	0911 503447
16	EL General Business PLC	BC-1	0911 202351
17	Elmiolindo Construction P.L.C.	BC-1	0911 241860
18	Equator Engineering Construction PLC	BC-1	0911 902436
19	Etete Construction	BC-1	0911 516970
20	Ethio Canadian Business Group	GC-1	0910 092805
21	Ethio General Contractor	GC-1	0114421569
22	Fal General Contractor	GC-1	0911 515348
23	Flintstone Engineering	BC-1	0114 663631
24	GAD Construction PLC	BC-1	0114-422223
25	Genale Construction PLC	BC-1	0911 441806
26	Geom Luigi Varnero P.L.C (Alber to Varnero)	GC-1	011551 4511
27	Getachew Atsbeha Kidanu	BC-1	0911236549
28	Giga Con.P.L.C. (G/Hiwot Girmay)	GC-1	0911201990
29	Hawa Adem Musse	GC-1	0915 330171
30	K.K.G. Building Contractor	BC-1	0912 114192
31	Kasma Engineering P.L.C.	BC-1	0930034821
32	Mohammed Abas	BC-1	0911 804956
33	Mohammed Yesufe Eshete	BC-1	0911 222208
34	N.K.H. Construction P.L.C.	GC-1	0912 059728
35	Rediete-Dagem Engineering & Construction P.L.C.	BC-1	0911 202920

No.	Contractor Name	Category	Tel.
36	Sina Construction P.L.C.	BC-1	0911 873432
37	Sur Construction Plc	GC-1	011-5-521015
38	Tekelberhan Ambaye Construction PLC	GC-1	116253041
39	Teklehaimanot Asgedom Building Contractor	BC-1	0913 623494
40	Tewodros Abera General Contractor	GC-1	911208329
41	Tewodros Abera General Contractor	GC-1	911208329
42	TIKS Construction	BC-1	0911 491865
43	Tiku Berhane Building Contractor	BC-1	0911 516204
44	Yotek Construction PLC	GC-1	115573196
45	Zamra Construction PLC	BC-1	0911 563327