



ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

THE IMPACT OF WORKING CAPITAL MANAGEMNT ON
FIRM'S PROFITABILITY

Evidence from Selected Manufacturing Companies in Somali
Regional State, Ethiopia.

BY

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The Impacts of Working Capital Management on Firms
Profitability.

Evidence from Selected Manufacturing Companies in
Somali Regional State, Ethiopian.

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Advisor: Laxmikantham P (Ph.D.)

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Statement of Declaration

I, Niman Ibrahim, hereby declare that the thesis work entitled “the impact of working capital management on firms profitability, evidence from selected manufacturing companies in Ethiopian Somali regional stat, submitted by me for the award of the degree of Master of Science in Accounting and Finance of Addis Ababa university, is original work and it has not been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution.

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Statement of Certification

This is to certify that Niman Ibrahim Arab has carried out his research work on the topic entitled “the impacts of working capital management of firms’ profitability, evidence from selected manufacturing companies in Ethiopian Somali regional state. The work is original in nature and is suitable for submission for the reward of the M.Sc. Degree in Accounting and Finance.

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Abstract

The purpose of this study is to investigate the impact of working capital management on firms' profitability. The study aims to examine the statistical significance between component of working capital management and firm's profitability. In light of this objective the study adopted quantitative method of research approaches to test a series research hypothesis. Specifically, the study used survey of documentary analysis of companies' audited financial statements. Stratified sampling design was employed based on purposively of companies. Then companies were selected based on purposively from each stratum's to avoid biases. Consequently, the study selected a sample of twenty five (25) companies for the period of six years (2009-2014) with the total of 150 observations. Data was analyzed on quantitative basis using Pearson's correlation and pooled panel data regression models of cross-sectional and time series data were used for analysis. More over the study used gross operating profit as dependent profitability variable. Accounts receivable Days, inventory holding Days, and accounts payable Days and cash conversion cycle are used as independent variables. Also current ratio, debt ratio, firm size and sale growth as control variable The results showed that there is statistical significance negative relationship between profitability and working capital management. It means that, companies managers can create profits or value for their companies and shareholders by handling correctly the cash conversion cycle and keeping each different component of working capital to a possible optimum level. The researcher found that there is a significant negative relationship between liquidity and profitability. Moreover the study finds that there is a significance negative relationship between size and firm profitability. Unlike, the study found that there is negative relationship between debt used and firms profitability. Meanwhile the study found that there is positive relationship between firm's growths and firm's profitability

Keywords: *working capital, working capital management, firm size, cash conversion cycle and profitability*

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Acronyms

ARD:	Account receivable Days
APD:	Average Payable Days
CCC:	Cash Conversion Cycle
CLRM:	Classical Linear Regression Model
COGS:	Cost of Goods Sold
CR:	Current Ratio
CSA:	Central Statistics Agency
DR:	Debt Ration
ESRRA:	Ethiopian Somali regional Revenues authority
GOP:	Gross Operation Profit
GWC:	Gross Working Capital
ISIC:	International Standard Industrial Classification
IHD:	Inventory holding Days
NPM:	Net Profit Margin
NWC:	Net Working Capital
OLS:	Ordinary Least Square
ROA:	Return on Asset
SG:	Sales Growth
SIZE:	Size of Firms
WC:	Working Capital

Chapter One

1. Introduction

This thesis examines the impacts of working capital management on firm's profitability, evidence from selected manufacturing companies in Ethiopian Somali Regional State. Working capital refers to the firm's investment in short-term assets like account receivable, account payable, inventory and others including cash or cash equivalent and marketable security. Management of working capital is important to the financial health of businesses of all sizes. This importance is hinged on many reasons, first, the amounts invested in working capital are often high in proportion to the total assets employed and so it is vital that these amounts are used in an efficient way. Second, management of working capital directly affects the liquidity and the profitability of a firm and consequently its net worth. Working capital management therefore aims at maintaining a balance between liquidity and profitability while conducting the day-to-day operations of a business concern.

The purpose of this chapter is to provide background information on the thesis. The remaining parts of the chapter are organized under nine sections. The first section presents back ground of working capital management, the second section indicates statement of the problem. The objectives and hypotheses of the research are presented in section three and four respectively. The fifth section shows Methodology adopted in the study. And section six presents the significant of the study. Whereas, Scope of study is discussed in section seven. And section eight shows Limitation of the study, and finally in section nine is presented organisation of theses,

1.1 Background of Study

Corporate Finance decisions are generally divided into two main parts: the management of assets (investments decisions) and source of funds or liabilities and equity (financing decisions), in the long-term and the short-term (Pandey, 2007; Ross, et al., 2000). The management of short-term assets and related liabilities is called working capital management. Working capital is the capital available for conducting the day-to-day operations of an organization; it represents firms' investment in short term assets.

Working capital is also an important component in companies' financial decision making. However, it involves investment and financing in short term periods. Because of that working capital has been seen as secondary in financial literature compared to long term financing decisions. Financial objectives, such as sales and profit, are still a primary purpose for companies. In other words, increasing their market value is the main goal. Working capital management is a very important component of corporate finance because it directly affects companies' liquidity and profitability (Deloof, 2003; Eljelly, 2004; Raheman and Nasr, 2007). Therefore, efficient management of working capital is a fundamental part of the overall corporate strategy to create shareholder value. In general, business firms try to keep an optimal level of working capital that maximizes their value (Deloof, 2003; Afza & Nazir, 2007).

Smith (1980) concluded that working capital management is important because of its effect on firm's profitability and risk, and consequently its value. Similarly, Deloof (2003) indicated that the way working capital is managed has a significant impact on profitability of business firms. The above studies point out that there is a certain level of working capital requirement, which potentially maximizes firm's returns. On the other hand, Kargar and Bluementhal (1994) mentioned that bankruptcy may be likely for firms that put inaccurate working capital management procedures into practice,

Working capital management involves the decision on the amount and composition of current assets and how to finance such assets. Current assets include all those assets

that in the normal course of business return to the form of cash within a short period of time, ordinarily within a year, and such temporary investment as may be readily converted into cash upon need (Raheman and Nasr, 2007). Efficient working capital management involves planning and controlling current assets and current liabilities to prevent the risk of a company's inability to meet due short term obligations on the one hand, and to avoid excessive investment in these assets on the other hand (Eljelly, 2004). Many surveys have indicated that managers spend considerable time on day-to-day problems that involve working capital decisions (Raheman and Nasr, 2007).

One reason for this is that current assets are short-lived investments that are continually being converted into other types (RAO, 1989). With regard to current liabilities, the company is responsible for paying these obligations on a timely basis. Taken together, decisions on the level of different working capital components become frequent, repetitive, and time consuming (Raheman and Nasr, 2007). The way how working capital is managed can have a significant impact upon both the liquidity and profitability of the company (Shin and Soenen, 1998; Dong and Su, 2010). The ultimate goal of any company is to maximize profits. But, preserving its liquidity is also an important objective (Shin and Soenen, 1998; Raheman and Nasr, 2007). It is not a simple task for managers to make sure that in managing working capital, liquidity is maintained in day-to-day operations and that, simultaneously, business operations run efficiently and in a profitable manner (Zariyawati et al., 2009). Some decisions that tend to maximize profitability tend to minimize the chances of appropriate liquidity. Conversely, focusing almost entirely on liquidity will tend to reduce company's potential profitability (Mathuva, 2010).

The dilemma in working capital management is to achieve the desired balance between liquidity and profitability. One of the objectives should not be achieved at the cost of the other because both have their importance. Hence, working capital management should be given proper consideration and will ultimately influence the company's profitability (Raheman and Nasr, 2007; Dong and Su, 2010).

Working capital has been regarded as the result of the time lag between the expenditure for purchasing raw materials and the collection from the sale of the finished good (Dong and Su, 2010). Thus, the Cash Conversion Cycle is a powerful measure for assessing how well a company is managing its working capital. The longer this time lag, the larger the investment in working capital (Deloof, 2003). Shorter cash conversion cycle could be associated to high profitability because the longer the cash conversion cycle the greater the need for expensive external financing. Therefore, by reducing the period that cash is tied up in working capital, companies can operate more efficiently (Nobanee and AlHajjar, 2009). Cash conversion cycle can be shortened by reducing the inventory conversion period via processing and selling goods more quickly; or by decreasing the receivables collection period via speeding up collections; or by lengthening the payables deferral period through slowing down payments to suppliers (Nobanee, 2009). This increases companies' efficiency of internal operations and results on higher profitability and higher market value. Delaying payments to suppliers allows companies to assess the quality of the products that were bought, and can be an inexpensive and flexible source of financing. But we should bear in mind that late payment can have a very high implicit cost whenever early payment discounts are available. Since, money is also locked up in working capital, the greater the investment in current assets, the lower the risk but also the lower the profitability obtained (Falope and Ajilore, 2009).

From another point of view, longer cash conversion cycle might increase profitability. It can happen because large inventories and a generous trade credit policy may lead to high sales. Larger inventories decrease stock-out risks. Trade credit may stimulate sales because it allows customers to assess product quality before paying (Long, Maltiz and Ravid, 1993; and Deloof and Jegers, 1996). However, corporate profitability might also decrease with cash conversion cycle, if costs with higher investments in working capital are higher and rise faster than the benefits of holding more inventories and granting more inventories and trade credit to customers (Deloof, 2003). Moreover, shortening the cash conversion cycle could harm the companies' profitability; reducing the inventory conversion period could increase the shortage cost; reducing the

receivables collection period could make the companies lose their good credit customers; and lengthening the payable period could damage the companies' credit reputation. Shorter cash conversion cycle is associated with high opportunity costs, and longer cash conversion cycle is associated with high carrying costs (Nobanee, 2009). An optimal level of working capital would be that in which a balance between risk and efficiency is attained, and both carrying costs and opportunity costs are minimized. It requires continuous monitoring to maintain the proper level of the various components of working capital, i.e., cash receivables, inventory and payables, etc.

The Working Capital Management of a business enterprise in part affects its profitability. The ultimate objective of any business enterprise is to maximize the profit. But, preserving liquidity of the business enterprise is an important objective too. The problem is that increasing profits at the cost of liquidity can bring serious problems to the firm. Therefore, there must be a trade-off between these two objectives of the business enterprise. One objective should not be at cost of the other because both have their importance. If we do not care about profit, we cannot survive for a longer period. On the other hand, if we do not care about liquidity, we may face the problem of insolvency or bankruptcy. For these reasons working capital management should be given proper consideration and will ultimately affect the profitability of the business enterprise. Therefore it is a critical issue to know and understand the impacts of working capital management and its influence on firm's profitability. Indeed, a lot of research has been conducted on this topic in other countries by using panel data through multiple regressions to show the impacts of working capital components on firm's profitability. However, as per the knowledge of this researcher, it is almost untouched in Ethiopian Somali regional state this limited evidence in the context of Ethiopian Somali regional state along with the importance of working capital management calls for research on their impacts on business firm profitability. In light of the above points,

The general objective of the study is examine or assess the impacts of working capital management components on the business firm profitability,

1.2 Statement of Problem

The effectiveness of working capital management can have a significant impact on both liquidity and profitability of a company (shin and soenen, 1998). For the liquidity, lacking working capital can account for inefficiencies in a company's operation when it is not able to pay off its due obligations. On the other hand, without sufficient working capital, the company will not either be able to provide goods or services required to the customer due to lack of money to buy materials for producing goods. The company's profitability can be jeopardized as a result.

In addition, Lamberson (1995) showed that working capital management is importance in managing financial aspect of the company. Many financial managers are finding it difficult to identify the important drivers of working capital management that can enhance their company profitability. Further, Lamberson (1995) working capital management has been major issue especially in developed countries. As a result, in order to explain the relationship between working capital management and profitability different researches have been carried out in different parts of the world especially in developed countries, Most of the researchers find a strong negative cause and effect relationship between number of day inventories, number of days account receivable and cash conversion cycle with and corporate profitability (shin and soenen, 1998; deloof,2003; raheman and nars 2007); and positive relationship between number of days accounts payable with the corporate profitability (Lazaridis and Tryfonidis, 2006). In contrast, there are few researchers provided different results. Such as Nobanee (2009) concludes a positive relationship between cash conversion cycle, number of day's accounts receivable and number of day's inventory with the firm's operating income to sales whereas number of days account payable has significant negative impact on the firm's performance. However, despite the above importance this issue failed to attract the attention of researchers in Ethiopia. Thus, while searching on internet, browsing through the books and journals the researcher didn't find directly related research topics carried out in Ethiopian Somali Regional state Therefore, the researcher believed that, the problem is almost untouched and there is a knowledge gap on the area. Hence, lack of proper research study on the area gives a chance for

Ethiopian Somali regional state company's managers to have limited awareness in relation to working capital management to increase firm's profitability. Therefore, by keeping the above problem in mind, the study tried to find out the impacts of working capital management on firms profitability.

1.3 General Objective

This study aims to examine impact of working capital management components on firm's profitability, evidence from selected manufacture companies in Ethiopia Somali regional state. From period of 2009 to 2014.

1.3.1 Specific objectives

The specific objectives of this study are as follows:-

- I. To Examine the efficient working capital management and profitability of firms'
- II. To Examine the effect of Accounts Receivable Days (ARD) towards the firms profitability ,
- III. To Examine the effect of Inventories holding Days (IHD) towards the firm's profitability,
- IV. To Examine the effect of Accounts Payable Days (APD) towards the firms profitability
- V. To Examine the effect of cash conversion cycle (CCC) towards the profitability of the firms profitability,
- VI. To establish a relationship between liquidity and profitability.
- VII. To find out the relationship between debt used by the firms and their profitability.

1.4 Hypotheses of the Study

Several statements of supposition can be made in view of the impacts of working capital management components on firms' profitability. In light of the above research objective the following discussion covers the hypotheses (HP) that this study attempted to test.

HP 1:- There is significant positive relationship between efficient working capital management and profitability of firms’

HP 2: - There is significant negative relationship between Accounts Receivable Days (ARD) and Gross Operating Profit (GOP) of the firms.

HP3:-There is significant negative relationship between Inventories holding Days (IHD) and Gross Operating Profit (GOP) of the firms.

HP4:- There is significant negative relationship between Accounts Payable Days (APD) and Gross Operating Profit (GOP) of the firms

HP5:- There is significant negative relationship between Cash Conversion Cycle (CCC) and Gross Operating Profit (GOP) of the firms.

HP6:-There is significant negative relationship between liquidity and profitability.

HP7:-There is significant negative relationship between debt used by the firms and their profitability.

1.5 Research Method Adopted

In order to achieve the main research objectives a quantitative method is adopted. The purpose of using such approach is to gather data that help the researcher to investigate cause-effect relationships. In this particular case, the effect is the company’s profitability and the research is targeted at identifying significant causes. To gather data on working capital component and profitability, it is apparent to use survey of structured documentary review. Accordingly, to achieve its objective companies audited financial statement especially balance sheet and income statement was reviewed. Thoroughly the study was depend on secondary data. On the other hand, once data were found acceptable, data entry and process was made using the E-views 6 software programme. Analysis of data was undertaken to show important

relationships of variables in the study. To this end, descriptive statistics, regression analysis and Pearson correlation coefficient was used.

1.6 Significance of the Study

Much has been written and studied about working capital management and profitability of the firm in different country, but this research add some insight about this issue related to Ethiopia literature. Similarly, it benefits to the managers to expand their learning curve to reduce the possibility of default, especially in turbulent time; in view that working capital management has influence on the profitability performance of the firms. Furthermore, this study is also of importance for practitioner, policy maker, academician and firm managers with regards to issue associated with the effect of working capital management on profitability of firm, as it enables minimisation of firm's cost of finance and further planning being conducted in order to maximise firm's profitability and shareholders' wealth. Besides, the study helps as a guideline for those who conduct their study on similar topic and it gives brief information for the shareholders, prospective customers and creditors of a firm regarding profitability in relation to efficient working capital management and policy. Finally, this study will act as a reference point to other researchers in the same field as it is directly linked to the current interest in sustainable financial management practices in both private and public sector.

Hence, the findings of this study have a great contribution to the body of knowledge by identifying how working capital management efficiency are affect the profitability of manufacturing companies in Ethiopian Somali regional state.

1.7 Scope of Study

This study focuses on the impact of working capital management component on the firm's profitability, evidence selected from manufacture companies in Ethiopian Somali regional state, from a period 2009 -2014, So selecting six years because limited number of firms with an operating life of more than six years although there is a lot of business operation which existing in Ethiopian Somali regional state this study focus on manufacture sectors and The decision to use manufacturing companies was based

on the following two aspects that enhance the validity of the study. First, manufacturing companies represent an appropriate sample in order to analyze working capital management. Because all of three components working capital (inventory, account receivable and payable) usually play important roles in the manufacturing sector and comparability of the sample companies will be enhanced. For instance, service companies most probably hold much less inventory and accounts receivable. Hence, they represent a less reliable source of information for this specific study, and also based on time, budget,

1.8 Limitation of Study

The quality of one research is highly depending on the genuine information acquired from concerned populations or companies. So that, the sample size for this study may not be large enough to study the issue and to represent the study population, for the very reason that, there are limited number of firms with an operating life of more than six years. Lastly, in general the most important factor that limited the study output was shortage of time.

1.9 Organization of the Paper

This paper is organized under five chapters. The first chapter includes background of the study, statement of the problem, research objectives and hypothesis, significance of the study, scope of the study and limitation of study and, Research method adopted and organization of the research ,The second chapter is exclusively devoted to the review of related literature on impact of working capital management from different countries perspective. Chapter three deals with the methods which is used to collect and analyze the data. Analysis and presentation of the findings of the study is described in chapter four. The last chapter, chapter five, presents the conclusions drawn from the findings, and the recommendations made to address the problems uncovered, and the implications of the findings for future research, practitioners, government and other support agencies. And all the reference materials used in the study is lists under bibliography.

Chapter Two

2. Literature Review

The purpose of this chapter is to review the evidence on working capital management and profitability measures of a firm. Hence, the chapter is arranged into three sections. The first section presents the theoretical review of working capital management while the second section reviews the empirical evidence pertaining to working capital management. Third, the section presents conclusions on the literature review and identifies the knowledge gap that this study attempts to fill in. The term working capital implies company's investment in short term assets like cash, short term securities, accounts receivables and inventories (Weston and Brigham, 1977). Precisely, these assets are financed by short-term liabilities like accounts payable and short term borrowings; thus net working capital is defined as the difference between current assets and current liabilities. Working capital management is the decision relating to working capital and short term financing, and this includes managing the relationship between the company's short term assets and its short term liabilities. This enables the company to continue operations and to have enough cash flow at its disposal to satisfy both maturing short-term debts and upcoming operational expenses, which is the major objective of working capital management.

2.1 Nature of Working Capital

While assets represent wealth of the firm, firms may not want to hold many of the assets appearing on the balance sheet (Bhattacharyya, 1987; Sebatleab, 2002). In a perfect world, the production process takes very little time to convert the raw materials to finished products which gets sold immediately in cash when it completed the production process; and the input market is so perfect that any amount of raw material is available at any time at a fixed price. There is no uncertainty, no transaction costs, and no scheduling costs of production or constraints of technology. The unit costs of producing goods will not change with the amount produced. Firms can borrow and lend at the same interest rate. Capital, labor and product markets are perfectly competitive and reflect all available information. In such an ideal world firms may like to hold fixed assets like plant and machinery which produce goods and services; the sales of which

generate a profit; current assets like accounts receivable, inventories or even cash are not likely to be held in the business.

However, this is an ideal situation difficult to have in the real world. Instead, the production process takes quite some time; the finished products are not sold so quickly which means a quantity of stocks remains in the warehouse. Moreover, the sales are not always in cash; some amount of credit has to be given and the input markets are so uncertain, so that, firms have to keep a certain amount of safety stock all the time. These ‘non-ideal’ conditions thus generate certain assets which are called current assets and the levels of these assets make a significant part of a firm’s investment in its total assets. Current assets, therefore, block the funds which should have been otherwise available for meeting working expenses. Each and every current asset of a firm is, thus, nothing but congealed fund for working expenses. And because business is a continuous process, every cycle of operation generates these current assets which need to be funded for immediate financing of working expenses. This funding for working expenses is done by, what we popularly call, working capital.

2.1.1 Definition and Concept of Working Capital

The term working capital originated with the old Yankee peddler, who would load up his wagon with goods and then go off on his route to peddle his wares. The merchandise was called working capital because it was what he actually sold, or “turned over,” to produce his profits. The wagon and horse were his fixed assets. He generally owned the horse and wagon, so they were financed with “equity” capital, but he borrowed the funds to buy the merchandise. These borrowings were called working capital loans, and they had to be repaid after each trip to demonstrate to the bank that the credit was sound. If the peddler was able to repay the loan, then the bank would make another loan, and banks that followed this procedure were said to be employing “sound banking practices” (Brigham and Houston, 2003).

The concept of working capital was, perhaps, first evolved by Marx (1867), thought in a somewhat different form. Marx used the term ‘variable capital’ meaning outlays for payrolls advanced to workers before the goods they worked on were complete. He

contrasted this with 'constant capital', which according to him, is nothing but 'dead labor', i.e. outlays for raw materials and other instruments of production produced by labor in earlier stages which are now needed live labor to work with in the present stage. This 'variable capital' was the wage fund which remains blocked in terms of financial management, in work-in-process along with other operating expenses until it is released through sale of finished goods. Although Marx did not mention that workers also gave credit to the firm by accepting periodical payment of wages which funded a portion of work-in-process, the concept of working capital, as we understand today, was embedded in his 'variable capital' The working capital of a business enterprise can be said as portion of its total financial resources which is put to a variable operative purpose (Brigham and Gapenski, 1996).

The facilities that are necessary to carry on the productive activity and represented by fixed assets investment (i.e. non- current asset investment) are to be operated by working capital. In an annual survey of industries by government of India (2008), the working capital is defined as "stocks of raw materials, stores, fuels, semi-finished goods, including work in progress and finished products; cash in hand and at the bank and the algebraic sum of sundry creditors as represented by (a) outstanding factor payments e.g. rent, wages, interest and dividends; (b) purchase of goods and services; (c) short term loan and advances and sundry debtors comprising amounts due to the factory on the account of sale of goods and services and advances towards tax payments."

The term "working capital" refers to the investment in current assets which are required to carry on the operations of the business (Firer *et al*, 2008). Kaveri (1985) refers to it as the difference between current assets and current liabilities. Managing the firm's working capital is a day-to-day activity that ensures that the firm has sufficient resources to continue its operations and avoid costly interruptions.

The term capital is used in deferent ways in economics and in finance (Bhattacharyya, 1987). In economics, the term capital represents goods consisting of a great variety of things, namely, machines of various kinds, plants, houses, tools, raw materials and goods-in-process. A finance manager of a firm looks for these things on the assets side

of the balance sheet. For capital, he turns his attention to the other side of the balance sheet and never commits the mistake of adding the two together while taking the census of total capital of the business. Although economists regard fixed capital as what is represented by long-term assets, a finance manager defines fixed capital as that having long term maturity.

Working capital is defined as “the excess of current assets over current liabilities and provisions”. However, as per accounting terminology, it is difference between the inflow and outflow of funds. In Arnold (2008) working capital is defined as it includes “stocks of materials, fuels, semi-finished goods including work-in-progress and finished goods and by-products; cash in hand and bank and the algebraic sum of various creditors as represented by outstanding factory payments e.g. rent, wages, interest and dividend; purchase of goods and services; short-term loans and advances and sundry debtors comprising amounts due to the factory on account of sale of goods and services and advances towards tax payments”.

On the other hand, the term working capital is often referred to “circulating capital” which is frequently used to denote those assets which are changed with relative speed from one form to another i.e., starting from cash, changing to raw materials, converting into work in-progress and finished products, sale of finished products and ending with realization of cash from debtors (Weston and Brigham, 1977). Further, Shin and Soenen (1998) defined working capital as a “time lag between the expenditure for the purchase of materials and the collection for the sale of the finished products”.

In summary, working capital means the funds (i.e. capital) available and used for day to day operations of an enterprise. It consists broadly of that portion of assets of a business which are used in or related to its current operations. Further, it refers to funds which are used during an accounting period to generate a current income of a type which is consistent with major purpose of a firm existence. In light of the above definition of working capital the following discussions present components of working capital, types of working capital, factors determining working capital requirement,

working capital management, working capital policy, profitability and liquidity measures and trade-off between liquidity and profitability in an orderly manner.

2.1.2 Components of Working Capital

According Paramasivan and Subramanian, 2009). There are two concepts of working capital known as gross and net. Gross working capital (GWC): Gross working capital generally deals with overall corporate assets. It is also the total cash, and cash equivalent that a business has on-hand to run the business. Cash equivalents may include inventory, account receivable and investments, on marketable securities, which may be liquidated within the calendar year (Paramasivan and Subramanian, 2009). Generally, gross working capital is simply called as the total current assets of a firm.

Net working capital (NWC): it's the amount of assets or cash that remain after subtracting a company's current liabilities which refers to the claims of outsiders which are expected to mature for payment within an accounting year and include creditors for goods, bills payable, bank overdraft and accrued expenses from its total current asset (Brealey and Myers, 2006). This can be mathematically presented as:

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

2.1.3 Types of Working Capital (WC)

Most businesses experience seasonal or cyclical fluctuations. For example, construction firms have peaks in the spring and summer, retailer's peak around Christmas, and manufacturers who supply both construction companies and retailers follow similar patterns. Similarly, all businesses must build up current assets when the economy is strong, but they then sell off inventories and reduce receivables when the economy slacks off. Hence, based on time, working capital may be classified into two important types as permanent and temporary working capital (Paramasivan and Subramanian, 2009) and briefly discussed below.

Permanent Working Capital: it's also known as fixed working capital and it refers to a minimum amount of investment in all working capital which is required at all times

to carry out minimum level of business activities (Brigham and Houston, 2003). In other words, it represents the current assets required on a continuing basis over the entire year. Further, working capital has a limited life and usually not exceeding a year, in actual practice some part of the investment in that is always permanent. Since firms have relatively longer life and production does not stop at the end of a particular accounting period some investment is always locked up in the form of raw materials, work-in progress, finished stocks, book debts and cash. Investment in these components of working capital is simply carried forward to the next year. This minimum level of investment in current assets that is required to continue the business without interruption is referred to as permanent working capital (Fabozzi and Peterson, 2003 p. 679). It's financed through long term debt and common stock.

Temporary Working Capital: it's also known as the circulating or transitory working capital. This is the amount of investment required to take care of the fluctuations in the business activity. Fabozzi and Peterson (2003 p. 678) they defined as a rises of working capital from seasonal fluctuations in a firm's business. Because firms do not have to maintain this form of working capital throughout in the year, or year after year, it may be better to use short-term (bank credit) rather than long-term sources of capital to satisfy temporary needs. In other words, it represents additional current assets required at different times during the operating year. For example, extra inventory has to be maintained to support sales during peak sales period (seasonal working capital). Similarly, receivable also increase and must be financed during period of high sales. On the other hand investment in inventories, receivables and the like will decrease in periods of depression (special working capital). Temporary working capital fluctuates over time with seasons and special needs of firm operations, whereas, permanent WC changes as firms sizes increases overtime. Further, temporary WC is financed by short term debt.

2.1.4 Factors determining working capital requirements

The total working capital requirement of a firm is determined by a wide variety of factors. These factors affect different organizations differently and they also vary from time to time. In general factors influencing working capital decisions of a firm may be

classified as two groups, such as internal factors and external factors (Paramasivan and Subramanian, 2009). The internal factor includes nature of business, size of business, firm's product policy, credit policy, and growth and expansion of business. The external factors include business fluctuations, changes in the technology, infrastructural facilities, import policy and the taxation policy. These factors are discussed in brief in the following lines:

Internal factors

According to Mekonnen .M (2011) there are factors that the companies will take in to account while determining the optimal level of working capital needed for the business concern by looking inherent factors related to the business and they are presented as follows:

Nature and size of the business: The working capital requirements of a firm are basically influenced by the nature and size of the business. Size may be measured in terms of the scale of operations. A firm with larger scale of operations will need more working capital than a small firm. Similarly, the nature of the business influences the working capital decisions. Trading and financial firms have less investment in fixed assets. But require a large sum of money to be invested in working capital. Retail stores, business units require larger amount of working capital, whereas, public utilities need less working capital and more funds to invest in fixed assets. Mekonnen .M (2011)

Firm's production policy: The firm's production policy (manufacturing cycle) is an important factor to decide the working capital requirement of a firm. The production cycle starts with the purchase and use of raw material and completes with the production of finished goods. On the other hand production policy is uniform production policy or seasonal production policy, also influences the working capital decisions. If the company maintains continues or uniform production policy, there is a need of regular working capital. If the production policy of the company depends upon the situation or conditions like season, working capital requirement will depend upon the conditions laid down by the company and changing demand. Mekonnen .M (2011)

Firm's credit policy: The credit policy of a firm influences credit policy of working capital. A firm following liberal credit policy to all customers requires funds. On the other hand, the firm adopting strict credit policy and grant credit facilities to few potential customers will require less amount of working capital.

Growth and expansion of business: Working capital requirement of a business firm tend to increase in correspondence with growth in sales volume and fixed assets. A growing firm may need funds to invest in fixed assets in order to sustain its growing production and sales. This will, in turn, increase investment in current assets to support increased scale of operations. Thus, a growing firm needs additional funds continuously. Mekonnen .M (2011)

External factors

Sometime firm's working capital requirement can be affected by external factor which will not be controlled through the business internal administration and management process and they are discussed as follows:

Business fluctuations: Most firms experience fluctuations in demand for their products and services. These business variations affect the working capital requirements. When there is an upward swing in the economy, sales will increase, correspondingly, the firm's investment in inventories and book debts will also increase. Under boom, additional investment in fixed assets may be made by some firms to increase their productive capacity. This act of the firm will require additional funds. On the other hand when, there is a decline in economy, sales will come down and consequently the conditions, the firm try to reduce their short-term borrowings. Similarly, the seasonal fluctuations may also affect the requirement of working capital of a firm. Mekonnen .M (2011)

Changes in the technology: The technological changes and developments in the area of production can have immediate effects on the need for working capital. If the firm wish to install a new machine in the place of old system, the new system can utilize

less expensive raw materials, the inventory needs may be reduced there by working capital needs may be affected. Mekonnen .M (2011)

Taxation policy: The amount of tax to be paid is determined by the prevailing tax regulations and very often taxes have to be paid in advance. Hence, the tax policies of the Government will influence the working capital decisions. If the Government follows regressive taxation policy, i.e. imposing heavy tax burdens on business firms, they are left with very little profits for distribution and retention purpose. Consequently the firm has to borrow additional funds to meet their increased working capital needs. When there is a liberalized tax policy, the pressure on working capital requirement is minimized. In general, if tax liability increases, it will lead to an increase in the level of working capital and vice versa. In summary, firm's financial manager should have to take in to account the above determinants while deciding on the optimal level of working capital needed and the timing for day to day activities of the business operations. Mekonnen .M (2011)

2.1.5 Working Capital Management

According to Machiraju (1999), working capital management involves administration of current assets and current liabilities which consists of optimizing the level of current assets in partial equilibrium context. Working capital management involves the relationship between a firms' short –term assets and its short- term liabilities. Osioma (1977) also describe working capital as regulation, adjustment, and control of the balance of current asset. In order to manage working capital efficiently, he notes that there must exist two elements as necessary components and desirable quantities. He further demonstrated that good working capital management must ensure acceptable relationship between components of a firm so as to make an efficient mix, which guarantee capital adequacy. Thus, working capital management should make sure that the desirable quantities of each component of working capital are available for management.

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

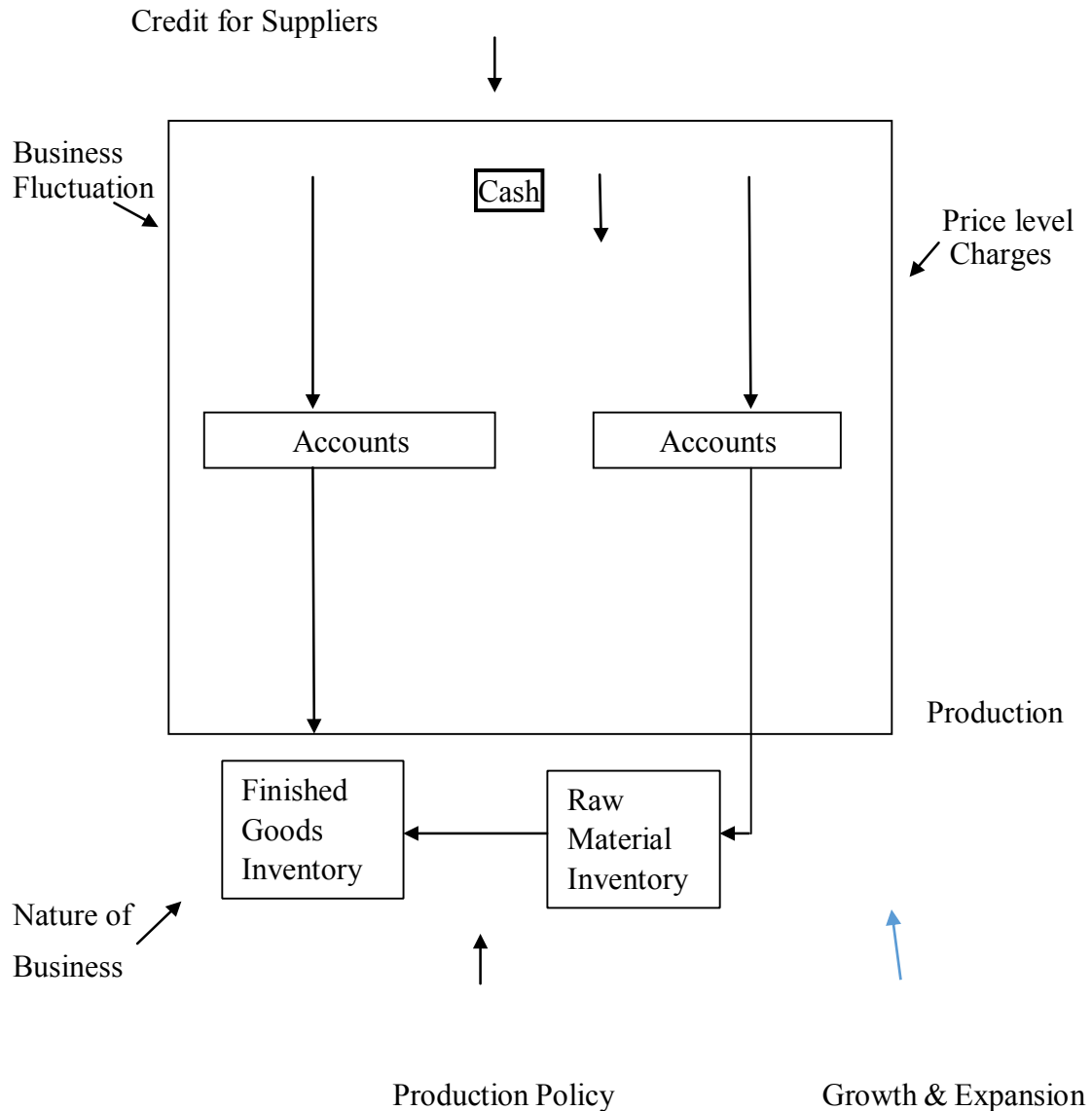
and the interrelationship that exists between them. Working Capital Management involves the relationship between a firm's short-term assets and short-term liabilities.

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 assets 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 "reversible". These decisions are therefore not taken on the same basis as Capital Investment Decision (NPD) rather they will be based on cash flow and or profitability. Management will use a combination of policies and techniques of working capital. These policies aim at managing the current assets (generally cash and cash equivalent, inventories and debtors).

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 that exist between them. The goal of working capital management is to manage the firm's current assets and liabilities in such a way that satisfactory level of working capital is maintained in the business. According to Horne (2000) working capital management is the administration of current assets in the name of cash, marketable securities, receivables, inventories. Block and Hirt (1992) are of the view that, working capital management involves the financing and management of the current assets of the firm.

2.1.5.1 .Working Capital Cycle

The various elements of working capital are interrelated, and can be seen as parts of a cycle. Figure 1: Operating (Working Capital) Cycle



Source: Anita Pieterse, 2006

Working capital cycle also known as operating cycle, with recent modification to cash, conversion cycle (Richards and Laughlin 1980) reflects the net time interval between actual cash expenditure on a firm's purchase of production resources and the ultimate

recovery of cash receipts from product sales. Khan and Jain (2007), also state that the operating cycle can be said to be the heart of the need for working capital. The continuing flow of cash to suppliers, to inventory, to accounts receivable and back into cash is what is called the operating cycle. They further stress that the operating cycle consists of three phases.

In phase one, cash gets converted into inventory which includes purchase of raw materials, conversion of raw materials into work-in-progress, finished goods and finally the transfer of goods to stock at the end of the manufacturing process. In the case of trading organizations, this phase is shorter as there would be no manufacturing activity and cash is directly converted into inventory. The phase is, of course, totally absent in the case of service organisations.

In phase two of the cycle, the inventory is converted into receivables as credit sales are made to customers. Firms which do not sell on credit obviously do not have phase two of the operating cycle. The last phase, phase three, represents the stage when receivables are collected. This phase completes the operating cycle and hence, the firms have to move from cash to inventory, to receivables and to cash again.

Meyer et al, (1992) also add that a company's operating cycle typically consists of three primary activities that is, purchasing resources, producing the product, and distributing (selling) the product. These activities create funds flows that are both unsynchronized and uncertain. They are unsynchronized because cash disbursements (for example, payments for resource purchase) usually take place before cash receipts (for example, collection of receivables). They are uncertain because of future sales and costs, which generate the respective receipts and disbursement, cannot be forecasted with complete accuracy. If the firm is to maintain liquidity and function properly, it has to invest funds in various short-term assets (working capital) during this cycle. It has to maintain a cash balance to pay the bills as they come due. In addition, the company must invest in inventories to meet customer orders promptly. Finally, the company invests in accounts receivables to extend credit to its customers.

Machiraju (1999), also argue that conversion cycle captures the fact that different components of working capital have different life expectancies and are transformed to

liquidity flows at different rates. The imbalance between cash inflows and outflows necessitates investment in current assets. The net cash conversion rate identified with the help of cash conversion cycle has to be financed by working capital.

2.1.5.2 Accounts Receivables Management

Sales on credit are inevitable necessity in the business world today. No business can exist without selling the products on credit. According to (Joshi, 2000) and Meyer et al (1992), noted that accounts receivables consist of the credit a business grants its customers when selling goods or services which take the form of either trade credit which the company extends to other companies or consumer credit, which the company extends to its ultimate consumers. The effectiveness of a company's credit policies can have a significant impact on its total performance. Machiraju (2005) also argue that receivables arise out of delivery of goods or rendering of services on credit. Receivables represent claims against others for future receipt of money, goods or services whose value depends upon the volume of credit sales and the policy for collecting such credits. Joshi (2000) indicated that the primary objective of investment in trade debtor is to increase profit by expanding sales to attract new customers and retain old customers. By constantly increasing its sales and profit the business carves out a bigger niche in the market and elevates its status among competitors.

In determining an optimal credit extension policy, Meyer et al (1992) observe that a company's financial managers must consider a number of major controllable variables that can be used to alter the level of receivables which include credit standards, credit terms and collection effort.

Credit standards are the criteria a company uses to screen applicants in order to determine which of its customers should be offered credit and how much. The process of setting credit standards allows the firms to exercise some degree of control over the "quality" of accounts accepted. The quality of credit extended to customers is a multidimensional concept involving the time a customer takes to repay credit obligation, given that it is repaid and the probability that a customer will fail to repay the credit extended to them.

In establishing credit standards, Horn (2000), suggests a means of categorising customers for the purpose of approving or refusing credit to them. This will enable the firm to avoid investigating the credit worthiness of customers who fall into the refused category. As a basis for credit extension to those who qualify, he suggests the comparison between the expected cost of credit extension and expected profit to be forgone in the absence of credit. The literature related to credit policy is quite extensive. Srinivasan (1999) states that it is essential that companies spell out clearly and precisely the credit policy directions in writing in the general interest of the organisation. The credit policy will be an adjunct to the company's marketing policy and should serve to reinforce. The decision made out of these options is based on the lowest cost. This technique is appropriate for a firm which relies to a larger extent on information obtained from experience with its own customers.

One significant revelation by Western and Copeland (1989) in the management of accounts receivable is the consequence of persistent inflation on accounts receivable. In inflationary period, when interest rates are high and financing requirement becomes large, buyers may delay their payment beyond the normal credit period. These in turn cause the selling firm's investment in account receivables to rise, increasing their financing requirement. The outcome of such a situation is the important role credit and collection policies assume in the broad spectrum of receivable management. A business should have a rational for collection of receivables. Collection policy can be tight policy which ensures better collection, fewer instances of bad debt but high collection costs. It may, however, antagonize the customers and some of them may switch to competitors. A liberal collection policy will have opposite effect Joshi (2000).

Meyer et al (1992) also assert that the collection effort consist of the methods a business employs in attempting to collect payment of past-due accounts. Some commonly used methods include sending notice or letters informing the customers of the past-due status of the account and requesting payment, telephones and/or visiting the customers in an effort to obtain payment, employing a collection agency and taking legal action against the customers.

Further Companies can monitor how well accounts receivable are managed using aging schedules and financial ratios. In aging analysis, a company's account receivables are classified into different categories based on number of days they are past due after sales such as 1 to 30 days, 31 to 40 days, 41 to 50 days and so on and it helps managers to get a more detailed picture of collection efforts. The schedule can represent the receivables according to how many there are in each age group or according to the total dollars the receivables represent in each age group. Hence, the higher the number of accounts or dollars in the shortest term groups, the faster the collection or efforts are made (Fabozzi and Peterson, 2003 p. 660). Whereas, financial ratio can be used to get an overall picture of how fast credit manager collect accounts receivable. Therefore, the average collection period (ACP) represents the average number of days for which a firm has to wait before its debtors are converted into cash. It is calculated by dividing accounts payable by purchases and multiplying the result by 365 and written as: Average collection period (ACP) = Receivables / (Sales/365)

This ratio measures the quality of debtors. A short collection period implies prompt payment by debtors. It reduces the chances of bad debts. Similarly, a longer collection period implies too liberal and inefficient credit collection performance. It is difficult to provide a standard collection period of debtors (Brigham and Houston, 2003, p. 691).

2.1.5.3 . Inventory Management

The word „inventory“ has been defined in many ways. Ballou (2004) defines inventories as stockpiles of raw materials, supplies, components, work in process, and finished goods that appear at numerous points throughout a firm's production and logistics channel's. According to Chase, Jacob and Aquilino (2004) inventory is the stock of any item or resource used in an organisation. An inventory system is the set of policies and controls that monitor levels of inventory and determine what levels should be maintained, when stocks should be replenished, and how large orders should be. Finally, Pycraft et al (2004) define inventory or stock as the stored accumulation of materials resources in a transformation system.

Inventory is a barometer of manufacturing efficiency. Excess level of inventories decreases cash flow while on the other side too small level of inventories may result in decreasing sales. Inventory turnover and days inventory held are two measures of inventory management. (White, 2008). Inventory of a firm can be divided into three groups which include raw material, work in process and finished goods (Horne, 1995). The work in process inventory can only be reduced to a certain level by speeding up manufacturing processes (Weston and Copeland, 1986). The other types of two inventories are however, not unavoidable (Horne 1995). Inventory is an important component of working capital. The higher and lower level of inventories can have their impact on the returns or profitability of firm. According to Chen et.al., (2005,2007), the public companies which have very high level of inventories have experienced very low level of returns but in general, lower level of inventories do not results in higher returns. The study conducted by Lai (2006) indicated that, when the market downgrades higher inventory firms, it results in decrease in inventory levels by the firms and vice versa. Another study conducted by Gaur et al. (2005) also examined inventory behavior in retail business firms. A model was proposed by them which explained the differences in inventory turnover across firms. They created an adjusted inventory turnover measure for specifically retail business firms. The results of the study found that there was a negative relationship between inventory turnover and gross profit margin while positive relationship between inventory turnover and capital intensity and sales surprise for the retail business firms. Inventory Turnover in Days which is also called as inventory conversion period is the average length of time required for conversion of raw materials into finished goods and then in selling those goods. This variable helps in evaluating the efficiency in inventory management policy of the firm. It is expected that this variable has also a negative relationship with the profitability. If the firms take more time in selling inventory which means inventories are not getting convert into sales, will decrease the profitability of firm.

Inventory is an important and valuable asset. It constitutes substantial portion of the total current assets of a business. Inventory covers a wide variety of items which are meant to be procured, „used up“ and sold in an ordinary course of business. It covers

the whole range of items starting from input of material and ending with output of finished products.

According to Josh (2000) the item forming inventory can be classified into three categories: (1) raw materials, (2) work-in-process (WIP) and (3) finished goods. Raw material inventory represents the item of basic inputs which are yet to be processed into final product. Work-in process covers all items which are at various stages of production processes. These items have ceased to be raw material but have not developed into final products and are at various stages of semi-finished levels. Finished goods inventory consists of the final products which are awaiting sale. According to Hugo et al (2002) the aim of inventory management is to hold inventories at the lowest possible costs. Josh (2000) enumerates the objectives of inventory management as follows; To reduce cost of holding stock so that investment in stock outs (running out of stock) production cycle operates smoothly.

To persuade the business to reduce the levels of inventory whereas one prompts it to increase the same. When making decisions on inventory, management has to find a compromise between the different cost components, such as the cost of supplying inventory, inventory-holding costs and cost resulting from insufficient inventories.

Starr and Miller (1962) identify three motives for holding inventories which are similar to Keynes three motives for holding cash. The transaction motives which emphasizes the need to maintain inventories to facilitate smooth production and sales operation, the precautionary motive which necessitate holding of inventories to guard against the risk of unpredictable changes in demand and supply forces and other factors; and the speculative motive which influence the decision to increase or reduce inventory levels to take advantage of price fluctuations. According to Wild (2002) inventory controls is the activity which organizes the availability of items to the customers. It coordinates the purchasing, manufacturing and distribution function to meet the marketing needs. This role includes the supply of current sale items, new products, consumables: spare parts, obsolete items and all other supplies. Inventory enables a company to support the customer service, logistic or manufacturing activities in situation where purchasing or manufacturing of the items is not able to satisfy the demand. Lack of satisfaction could

arise either because the speed of purchasing or manufacturing is too protracted, or because quantities cannot be provided without stocks. Clodfelter (2003) adds that a good inventory control system offers the following benefits as the proper relationship between sales and inventory can better be well maintained. Without inventory control procedures in place, the stores department can become overstocked or under stocked, Next, inventory control systems provide a business with information needed to take markdowns by identifying slow-selling merchandise. Discovering such items early in the season will allow a business to reduce prices or make a change in marketing strategy before consumer demand completely disappear Merchandise control system allows buyers to identify best-sellers early enough in the season so that re-orders can be placed to increase total sales for the store or department. Merchandised shortages and shrinkages can be identified using inventory control systems. Excessive shrinkage will indicate that more effective merchandising controls need to be implemented to reduce employee theft or shoplifting. Emphasizing the pertinence of the topic, Gourdin (2001) notes that inventory is one area of logistics that has received great deal of management's attention over the decade. Executives now realize that holding excessive stocks is simply too expensive. Therefore, a great deal of effort has been expended to eliminate unnecessary inventory without compromising customer service.

However, there are numerous situations where inventory simply must be held, particularly when meeting the needs of global customers. Management's goal should be to hold only what is necessary to satisfy customer requirements and manage it effectively, (ibid) Companies can monitor its inventory by looking through its financial ratios like that of monitoring receivables. Inventory turnover ratio in days (ITID) indicates the number of time the stock has been turned over sales during the period and evaluates the efficiency with which a firm is able to manage its inventory. This ratio indicates whether investment in stock is within proper limit or not (Brigham and Houston, 2003, p. 691). Hence, the ration is calculated by dividing inventory by cost of goods sold and multiplying with 365 days and depicted as follows:

$$\text{Inventory Turnover in Day (ITID)} = \text{Inventory} / (\text{Cost of sales}/365)$$

2.1.5.4 .Cash Management

Managing cash is becoming ever more sophisticated in the global and electronic age of the 1990s as financial managers try to squeeze the last dollar of profit out of their cash management strategies (Block & Hirt 1992). According to McInaney (2000) cash is much more than just one element of working capital. As the medium of exchange and store of value, cash provides the linkage between all financial aspects of the firm. More specifically it links short and long-term financing decisions with one another, with decision involving investment both in fixed assets and working capital. Clearly, cash management is one of the key roles in any organisation of any size description. Meyer, et al (1992) observes that cash and marketable securities are the most liquid of the company's assets. Cash is the sum of currency a company has on hand and the funds on deposit in bank checking accounts. Cash is the medium of exchange that permits management to carry on the various functions of the business organisations. From economic theory, several writers have theorized in support of Keynes' that the motives for holding cash are merely, transactionary, precautionary and speculative.

According to Keynes (1973), companies hold cash in order to bridge the interval between the time of incurring business cost and that of the receipt of the sale-proceeds. In other words, companies hold a certain amount of cash in order to meet the regular expenses of their activity. Therefore, the higher the firm's ability to schedule its cash flows (depending on their predictability) the weaker the „transactions-motive“ for holding cash will be. The transaction motive illustrates the cash holding of firms and therefore more applicable to SME the precautionary motive pays regard to a company's need to provide for unsuspected expenses and unforeseen opportunities of advantageous purchases. Thus, if a firm operates in a highly volatile sector, its precautionary cash holding will be higher than that of firms operating in a less risky environment.

The motive for holding cash refers to the holding of cash for the purpose of speculation. The speculative-motive is based on the assumption that rising interest rates induce decrease in prices of securities and vice versa. Therefore, a firm will invest its idle cash in securities when interest rates are expected to fall. This generates benefits for the firm

because the prices of the acquired securities will rise as a consequence of the anticipated fall in interest rate. Horne (2000) claims that companies do not hold cash for this kind of speculative purpose and can be assumed that this estimation is valid especially for SMEs which usually do not have the resources to make such complex financial decisions. The success of a firm's failure in cash management depends to a large extent in the strategy adopted. In this direction, Gitman et al (1970) suggest that each company's uniqueness in both receiving and disbursing funds from its operation should be recognised. Further to this, they suggest the adoption of cash management strategies based upon a company's own financial conditions and objectives. Yankey (1974) also observe that money is a scarce commodity and has several alternative uses. It is necessary that managers utilize every cedi so efficiently that the return on each cedi is approximately equal to the return of a cedi in an alternative investment of comparable risk.

2.1.5.5 .Cash Conversion Cycle (CCC)

The definition of Cash Conversion Cycle can range from a general statement to such as “a composite metric describing the average days required to turn a dollar invested in raw material into a dollar collected from a customer” (Stewart, 1995) to the simple description that CCC reflects “the length of time between cash payment for purchase of resalable goods and collection of accounts receivable generated by sale of these goods” (Moss and Stine, 1993). The CCC starts by purchasing raw material when payment is not made immediately. There is a delay in payment resulting in the accounts payable period. The firm processes the raw material and then sells the finished goods. The delay between the initial investment and inventories and the sale date is the inventory period. Sometime after the firm has sold the goods its customers pay their bills. The delay between the date of sale and the date at which the firm is paid is the accounts receivable period. If we prepare the firm's balance sheet at the start of the process, we will see cash as current asset. If we further delay a little, we find that cash has been replaced first with raw material inventory and then into finished goods inventories which is also a current asset. Similarly by selling goods, the inventory are converted into receivables (another current asset) and finally when the payments are made by the customers (accounts receivables), the cash balance is also replenished.

Comprehensive working capital policy minimizes the time lag between cash expenditure on material and the collection of cash on sales. One of the most commonly accepted definition of CCC currently found in literature is by Schilling who described as “*the* CCC, which mirrors the operating cycle, measures the interval between the time cash expenditures are made to purchase inventory for use in the production processes and the time that funds are received from the sale of finished product. This time interval is measured in days and is equal to the net of the average age of the inventory plus average collection period minus the average age of accounts payable” (Schilling, 1996).

In accounting context, the measurement of liquidity assesses the firm’s ability to cover obligations with cash flows (Gallinger, 1997; Lancaster et al., 1998). Hence some studies suggested that a dynamic view should be used in order to capture the ongoing liquidity from the operations of firms (Hager, 1976; Kamath, 1989; Richards and Laughlin, 1980; Emery, 1984). As a dynamic view, the Cash Conversion Cycle was first introduced by Gitman (1974) and further refined by Gitman and Sachdeva (1982). Richard and Laughlin (1980) operationalized the cash cycle concept by reflecting the net time gap between cash expenditures on purchase and the ultimate recovery of cash receipts from sale of product. Few other researchers also used this CCC to measure the liquidity in empirical studies of firm performance (Lancaster and Stevens, 1996). Firms can use the CCC in order to evaluate the changes in working capital and thereby assist in the monitoring and control of its components.

CCC is mentioned in the context of working capital management in the finance textbooks (Keown et al., 2003; Bodie and Merton, 2000). Cash Conversion Cycle is used as a comprehensive measure of working capital management as it shows the time lag between expenditure for the purchase of raw material and the collection of sales of finished goods (Padachi, 2006). The valuation of firm is closely related to Cash Conversion Cycle. A shorter CCC results in higher present value of net cash flows generated by the assets and therefore, a higher firm value. Furthermore, a short CCC implies that lesser day’s cash is tied up in working capital not offset by free financing

in the form of deferred payments, results in more liquidity for the firm (Soenen, 1993). Hence, it is expected that the length of Cash Conversion Cycle is negatively associated with firm's profitability. If the firm is able to reduce this cycle, this step will enhance its profitability. Therefore efforts must be made to keep at minimum level. If the payment period is longer than the sum of inventory and receivable period, it results in a negative Cash Conversion Cycle. But the chances of its occurrence are rare (Gitman 1991). A negative CCC indicates the number of days a company has received cash from sales before it must pay its suppliers (Hutchison et al., 2007). Gentry et al., (1990) developed a weighted cash conversion cycle, which scales the timing by the amount of funds in each step of cycle. However this measure cannot be used because the information required for the calculation of this measure is not available for Pakistani listed firms. Cash conversion cycle is deemed as the most dominant and prevalent measurement for efficiency of working capital management (Gill, Biger and Mathur, 2010; and Nobanee, Abdullatif and AlHajjar, 2011). In addition, CCC has also been adopted by other researchers as one of the measurements of WCM in their study such as Moss and Stine (1993); Eljelly (2004); Lazaridis and Tryfonidis (2006); Uyar (2009); Zariyawati, Annuar, Taufiq and Abdul Rahim (2009); Nor Edi Azhar and Noriza (2010); Charitou, Elfani and Lois (2010); Karaduman, Akbas, Caliskan and Durer (2011); and Charitou, Lois and Halim (2012). According to Deloof (2003); Zariyawati, Annuar, Taufiq and Abdul Rahim (2009); Gill, Biger and Mathur, (2010), for a comprehensive determination of WCM, CCC is applied that is computed based on [number of days accounts receivable (ARD) + number of days inventory (INV) – number of days accounts payable (AP)]. The formula for CCC computation is also supported by Nobanee, Abdullatif and AlHajjar, (2011), which measured CCC as [Receivables collection period + Inventory conversion period – Payable deferral period], meanwhile Raheman, Qayyum and Afza (2011) measured CCC as [Receivable turnover in days + Inventory turnover in days – Payables turnover in days). In order to calculate the CCC one has to first calculate average collection period, inventory turnover in day and average payment period (as discussed previously in this section). In deed the formula used to compute cash conversion cycle is represented as follows:

CCC = Average collection period + Inventory Turnover in day – Average Payment Period

In general, depend up on the company policy lowering CCC without increasing cost and reducing sales may be preferable for the firm to have a good position of liquidity.

2.1.6 Working Capital Management (WCM) Policy

The working capital management (WCM) policy is divided into working capital investment policy (WCIP) and working capital financing policy (WCFP). A firm may select an aggressive WCIP, which adopts a lower ratio of total current assets to total assets or select an aggressive WCFP policy that focus in maintaining a higher ratio of total current liabilities to total assets (Afza and Nazir, 2007). On the other hand, an excess of current assets has an inverse relationship with firm's profitability, while lower level of current assets caused lower liquidity position and risk of insufficiency of stock which resulted in challenges to support smooth operation of business (Van Horne and Wachowicz, 2004).

The trade-off between various policies of working capital has long been debated (Pinches, 1991, Brigham and Ehrhardt, 2004, Moyer et. al., 2005, Gitman, 2005). An aggressive working capital policy is related to higher return and higher risk, which is contrary to conservative working capital policies which emphasis on minimising risk and return (Gardner et al. 1986, Weinraub and Visscher, 1998). It was found that the higher the investment in current assets, the lower the risk and profitability incurred. Based on the empirical findings by Carpenter and Johnson (1983), there is no linear relationship found between current assets and systematic risk of US firms.

Weinraub and Visscher (1998) had conducted study on both policies of aggressive and conservative WCM by analysing quarterly data of ten various industries of US firms, during the period of 1984 to 1993. He concluded that there is a balance between adaptations of aggressive working capital on one hand with a conservative policy at the other hand. Thus, in this study, it is imperative that study is being conducted to also

analyse on the effect of working capital management policy towards the firm's profitability.

2.1.7 Profitability and Liquidity Measures

Profitability ratio is measure ability to generate income to surpass its liability and there are several measures of profitability which a company can use. Few measures of profitability are discussed here: The Net profit margin, The Gross operating Profit, Return on Assets,

Net profit margin: - measures profitability after consideration of all expenses including taxes, interest, and depreciation.

Net profit margin (NPM): It calculates the percentage of each sale dollar remains after deducting interest, dividend, taxes, expenses and costs. In other words it calculates the percentage of profit a company is earning against per dollars sale. $NPM = (\text{Earnings available for common stakeholder} / \text{Net sales}) * 100$

The larger the gross profit margin, the better for the company. The higher the gross margin, the more of a premium a company charges for its goods and services and higher value of return on sale shows the better performance (Gitman, 1999).

Gross operation profit (GOP): this ratio explains that how efficient a company is to utilize its operating assets. This ratio calculates the percentage of profit earned against the operating assets of the company (Weston and Brigham, 1977, P. 101).

Gross operating profit = $(\text{Sales} - \text{COGS}) / (\text{Total asset} - \text{financial asset})$

Return on Assets (ROA)

Return on Assets is also an important profitability ratio because it measures the efficiency with which the company is managing its investment in assets and using them to generate profit. It principally measures the amount of profit earned relative to the firm's level of investment in total assets. The return on assets ratio is related to the asset management category of financial ratio. It calculates the percentage of profit a company is earning against per dollar of assets (Weston and Brigham (1977, P. 101). The higher value of ROA shows the better performance and it can be computed as follows:

$$\text{ROA} = (\text{Earnings Available for Common Stockholders} / \text{Total Asset}) * 100$$

On the other hand, Liquidity ratio measures the short term solvency of financial position of a firm. These ratios are calculated to comment upon the short term paying capacity of a concern or the firm's ability to meet its current obligations (Fabozzi and Peterson, 2003 p. 729), Ratio information can be used in many ways but one group of the most important users of information are lenders. Huff, et al. (1999:97) have identified three important applications of liquidity ratio analysis: “evaluating companies before granting credit, designing of covenants to improve the odds for loan repayment and evaluation whether existing loan covenants are violated.” and they are discussed as follows:

Current Ratio is one of the most common and also the oldest measure of corporate liquidity is current ratio. It was developed at the end of the 19th century in order to evaluate the credit-worthiness of the companies (William H. Beaver, 1966:71). In its simplicity it expresses the liquid resources available when current liabilities are met and is calculated as follows (Maness & Zietlow, 2005:25):

$$\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$$

Maness & Zietlow (2005:27) has expressed that historically a current ratio of 2.0 has been a norm, meaning that company has approximately twice as much current assets as coverage for short term creditors. As the critique towards this measure often goes, it simplifies the protection available for short-term creditors as not all the current assets are easily liquidated but can be tied in the inventory

Quick Ratio or acid-test ratio is very similar to current ratio and solves the liquidation issues mentioned above by excluding inventories from calculation:

Quick ratio = Current assets – Inventories /Current liabilities.

Usefulness of current and quick ratios for measuring working capital has been questioned because of their static nature. As a balance sheet is a statement of *stock* instead of *flows* with the result that ratios calculated from balance sheet accounts are liquidity stock measures at a certain point in time. (Penman, 2007:725) Shin and Soenen (1998) have studied alternative tools for measuring the effectiveness of working capital and they suggested Cash Conversion Cycle, which was presented earlier in this paper. (Shin & Soenen, 1998)

On the other hand, debt ratio is one part of financial ratio which is used for debt management used by different company. Hence, it is ratio that indicates what proportion of debt a company has relative to its assets. The measure gives an idea to the leverage of the company along with the potential risks the company faces in terms of its debt-load (Fabozzi and Peterson, 2003 p. 586). It can be calculated as dividing total debt by total asset.

$$\text{Debt Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

2.1.7.1 Relationship Between Profitability and Liquidity

Jose et al (1996) showed that day-to-day management of a firm's short term assets and liabilities plays an important role in the success of the firm. Firms with glowing long

term prospects and healthy bottom lines do not remain solvent without good liquidity management. Walt (2009) is of the view that 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. Don (2009), 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 if 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 for many years because it was profitable (until recently) even though it had billions of dollars in debt. Therefore, he submits that both are important, and that neither measure alone can give a true 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 Ali Uyar (2009), in addition to profitability, liquidity management is vital for ongoing concern. Schilling (1996) suggests optimum liquidity position, which is minimum level of liquidity necessary to support a given level of business activity. He says 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 if the cycle lengthens, the minimum liquidity required increases, and vice versa,

2.2 Review of Empirical Studies

The previous section was presented the theories of working capital management focusing on components, types of working capital, determinant of working capital requirement including and working capital policies. This section reviews the empirical studies on the impact of working capital management on firms’ profitability. There are a number studies that assessed working capital management from the perspective of both developing and developed nations.

2.2.1 Past Studies on Working Capital Management and Profitability in Developed Countries

Shin and Soenen (1998) had examined on the relationship between the firm's net-trade cycle and profitability via correlation and regression analysis. Based on a Compustat sample of 58,985 listed American firm years during the period of 1975 to 1994, they found a strong negative association between the interval of the firm's net-trade cycle and profitability. The firm's profitability is measured by operating income plus depreciation related to total assets and to net sales. Net-trade cycle (NTC) was used as a measurement for efficiency of WCM instead of CCC due to each of the three segments in WCM such as number of days inventories, accounts receivable and accounts payable are measured based on percentage of sales and assuming other things being equal (*ceteris paribus* conditions). This is unlike CCC which has various denominators for the three segments and hence, projection on the additional working capital requirement for the corporation is difficult. Their findings also revealed that shorter NTC leads to higher present value of net cash flow and higher shareholders value. Thus, if the firm has shorter NTC, it means that the firm manages its working capital efficiently as the firm requires less external financing which denote an improved financial performance. Deloof (2003) had investigated on the relationship between working capital management and firms' profitability of 1,009 large Belgian non-financial corporations from 1992 to 1996. His results revealed a significant negative relationship between gross operating income with the number of day's accounts receivable, inventories and accounts payable. Hence, from the result obtained, it is proposed that shareholders value can be enhanced by maintaining a minimum number of day's accounts receivable, inventories and accounts payable. Noted that firm's profitability is being represented by gross operating income instead of return on assets as for firm that has mostly financial assets on its balance sheet, the operating activities had less influence to the return on assets.

Deloof (2003) had defined profitability as gross operating income that is measured by sales less cash costs of goods sold, and divided by total assets less financial assets, which financial assets refer to shares in other corporations that formed as substantial

segment of total assets. According to Deloof (2003), return on assets is not included as profitability measurement in view that for firm that has mostly financial assets on its balance sheet, there is less influence of the firm's operating activity towards the return on assets of the firm. Hence, financial assets are excluded from total assets in the computation of gross operating income. Other researchers have also supported and applied gross operating profit as measurement of profitability, which is computed as sales less cost of goods sold, divided by total assets less financial assets (Lazaridis and Tryfonidis, 2006; Gill, Biger and Mathur, 2010; Dong and Su, 2010; and Napompech, 2012).

Pioneer study by Mueller (1953) about corporate working capital and liquidity may be considered as the best-known study in this field (Samiloglu and Demirgunes, 2008). The difficulty, compounded due to the lack of any uniformity in definition of what is meant by "working capital" motivated him to study on corporate working capital and liquidity literature. Hence, the study was conducted using qualitative method to answer three problems towards which the paper was directed. Thus are; "what is meant by corporate working capital, liquidity and sources of liquidity?" Indeed the study concluded that the term "working capital" should be coextensive with current assets and described by its functions as revolving capital. Further, the study noted that the nature of an asset is determined by its function and not by its name. On the other hand, the study pinpointed that the ordinary use of the term "liquidity" makes it more a problem of marketing than accounting and finance and hence, liquidity is a consequence of the dynamic function of satisfying social wants. Finally, the study concluded that, it is through working capital that source of liquidity is attained.

Grablowsky (1976) examined mismanagement of accounts receivable by small business in US firm and its impacts on success. Prior to his study in 1975 he was conducted a survey about US firms credit policies and reported that most firms moved an account from active in-house collection to the bad debt file between four to twelve months after the due date. The survey also reveals that even if a customer became a slow payer or was occasionally delinquent, many retailers continued to extend credit

to him or her. These signify the existence of collection problems in the US. Depend up on the above problem he was interested to study on the relationship of such policy on firm's success. Grablowsky (1976) has showed as there is a significant relationship between various success measures and the employment of formal working capital policies and procedures. On similar study, Walker and Petty (1978) mentioned that managing cash flow and cash conversion cycle is a critical component of overall financial management for all firms, especially those who are capital constrained and more reliant on short-term sources of finance

Lazaridis and Tryfonidis (2006) had studied on the relationship between working capital management and profitability of 131 corporations listed in Athens Stock Exchange during time interval of 2001 to 2004. Their results revealed that there is a negative association between profitability, which is computed using gross operating profit, with cash conversion cycle as indicator for determining the effectiveness of working capital management. Hence, it is suggested that the firm's profitability can be enhanced by managing the cash conversion cycle and maintain its segments such as accounts receivables, accounts payables and inventory at an optimal stage. Gross operating profit represents the measurement for profitability instead of earnings before interest tax depreciation amortization (EBITDA) or pre-tax profit or net profit due to their intension of establishing an association between accomplishment and collapse of a business operation with operating ratio and associate it further with other operating variables such as cash conversion cycle. Furthermore, financial assets are deducted from total assets in order to eliminate the involvement of finance activity from operation activity, which may affect firm's profit. Gill, Biger and Mathur (2010) had broadened the study conducted by Lazaridis and Tryfonidis (2006) with regard to the relationship between working capital management and profitability. They have conducted an investigation on the relationship between working capital management and profitability of a sample of 88 American manufacturing firms listed on the New York Stock Exchange for a period of 3 years from 2005-2007 by adopting correlational and non-experimental research design. Based on their observation, there is a negative association between profitability, computed via gross operating profit and average days

of accounts receivable. They also found that there is a positive relationship between cash conversion cycle and profitability, while negative relationship discovered between accounts receivables and firm's profitability implied that for less profitable corporations, they will reduce their accounts receivables in order to shorten the cash gap in the CCC. Meanwhile, there is no significant relationship identified between firm size and gross operating profit ratio. Furthermore, it is suggested that the firm's profitability and shareholders value can be enhanced by managing their CCC efficiently and by maintaining their accounts receivables at an optimum position. Nobanee, Abdullatif and AlHajjar (2011) had studied on the relationship between firm's cash conversion cycle and its profitability for 34,771 Japanese non-financial firms listed on the Tokyo Stock Exchange from the period of 1990 to 2004. By using dynamic panel data analysis, they conclude that there is a strong negative association between the firm's cash conversion cycle and its profitability in all the samples studied apart from consumer goods and services firms. Based on the results obtained, it is suggested that the profitability of a Japanese corporation can be enhanced by reducing the CCC via reduction in the inventory conversion period or by shortening the receivable collection period or by deferring the payment period to suppliers. Therefore, reduction in the CCC brings improvement on firm's profitability as higher CCC incurs costly external financing.

2.2.2 Past Studies on Working Capital Management and Profitability in Developing Countries

Eljelly (2004) had investigated on the relationship between profitability and liquidity, which is computed by current ratio and cash gap or known as cash conversion cycle for a sample of 29 joint stock firms in Saudi Arabia over a period of 1996 to 2000. Based on the correlation and regression analysis, he found a significant negative relationship between profitability and liquidity of the firms that is computed via current ratio, which the association is further apparent in firms with higher current ratios and extended cash conversion cycle. However, cash conversion cycle or cash gap has higher influence in liquidity measurement as compared to current ratio that has impacted the profitability of the firms at industry level.

Afza and Nazir (2007) had examined on the relations between aggressive or conservative working capital policies and profitability together with Pakistani firm's risk level for 208 non-financial public limited firms listed on Karachi Stock Exchange from 17 diverse industrial sectors from 1998 to 2005. Based on cross-sectional regression models among working capital policies, profitability and risk level, the results showed that there is a negative association between the firms' profitability and the extent of aggressiveness of working capital policies in terms of investment and financing perspectives, which also validates the results of Carpenter and Johnson (1983). Furthermore, it was found that there is also no significant relationship between the current assets and current liabilities with the risk level of the firms. Profitability is measured by return on assets (ROA), return on equity (ROE) and Tobin's Q while working capital policy is divided into investment and financing policies. The aggressive investment policy is measured by total current assets divided by total assets, while aggressive financing policy is computed by total current liabilities divided by total assets.

Uyar (2009) had examined on the relation between the duration of cash conversion cycle (CCC) with firm's size and profitability by analysing sample consist of 166 merchandise and manufacturing firms from seven industries (excluding services companies) listed on the Istanbul Stock Exchange for year 2007. He found that there is a significant negative relationship between CCC with firm size and profitability. Retail/wholesale industry reported the least CCC's mean value with an average of 34.58 days, while textile industry recorded as the topmost/uppermost CCC average of 164.89 days.

Falope and Ajilore (2009) had studied on the impacts of working capital management on profitability of a sample of 50 Nigerian non-financial firms listed on the Nigerian Stock Exchange from 1996 to 2005. Based on the panel data econometrics for pooled regression, they found that there is a significant negative association between net operating profit and the average collection period, inventory turnover, average payment period and cash conversion cycle. Besides that, they also found that there is no

substantial difference between large and small firms on the impacts of WCM. Based on the results obtained, it is suggested that shareholders value can be enhanced if the WCM is efficiently being employed via minimizing the days of accounts receivable and inventories.

Zariyawati, Annuar and Abdul Rahim (2009) had carried out study on the effect of working capital management on profitability of 1628 firms from six distinct economic segments listed in Bursa Malaysia during year 1996 to 2006. They found that there is a strong negative significant association between cash conversion cycle and profit achieved by the firms. Thus, based on their finding, firms are able to accomplish higher profitability by shortening their cash conversion phase. Nor Edi and Noriza (2010) had studied on the working capital management and its impact to the performance of 172 listed firms in Main Board of Bursa Malaysia from the viewpoint of market valuation and profitability from year 2003 to 2007. The result revealed that there are significant negative relationships between working capital segments such as cash conversion cycles, current ratio, current asset to total asset ratio, current liabilities to total asset ratio and debt to asset ratio with firm's performance in terms of firm's value that is measured by Tobin Q and profitability measured via return on asset and return on invested capital. Hence, in order to ensure effectiveness of business operation, firm manager need to take consideration on the significant contribution attributed by working capital management towards the enhancement of firm's market value and profitability.

Erasmus (2010) examined on relation between working capital management and firm's profitability for both listed and delisted South African industrial firms, listed on the Johannesburg Securities Exchange, which covers a 19 years period from 1989 to 2007. By using a panel data analysis, there are a total of 319 firms (159 listed and 160 delisted) with 3,924 firm-year observations being studied. The reason being for delisted firms that were previously listed being included in the study is to reduce the survivorship biasness. Overall, they found a significant negative relationship between firm's profitability as measured by return on assets with its net trade cycle (NTC), debt

ratio and liquidity ratio. However, for delisted firms under period review, the liquidity and debt ratio reveals more significant role than NTC. Hence, it is suggested that firm's profitability can be improved by lowering generally the investment in net working capital. Charitou, Elfani and Lois (2010) had investigated on the effect of working capital management on firm's profitability of an emerging market, which comprise of a sample of 43 industrial firms listed on Cyprus Stock Exchange for a period of 10 years from 1998 to 2007. By using multivariate regression analysis, they found that working capital management as represented by CCC and its major segments such as days in inventory, day's sales outstanding and creditor's payment period have an inverse relationship with firm's profitability, which is measured by return on asset (ROA). The control independent variables are firm's size which is measured by natural logarithm of sales, sales growth and debt ratio. Arising from the recent global financial crisis, the firm's managers and other major stakeholders, particularly investors, creditors and financial analysts need to focus in efficiently utilising the company's resources effectively, due to its impacts towards profitability that enable minimisation of business fluctuation, low risk of defaulting and further improvement in firm's value. Karaduman, Akbas, Caliskan and Durer (2011) had investigated on the relationship between working capital management and profitability of 127 listed corporations in the Istanbul Stock Exchange from year 2005 to 2009 for five years period by adopting panel data method. Working capital management efficiency is computed by using cash conversion cycle, while profitability is represented by return on assets (ROA). They found that profitability (ROA) can be improved by reducing CCC.

Charitou, Lois and Halim (2012) had investigated on the relationship between working capital management and firm's profitability for an emerging Asian country by focusing on 718 firms listed on the Indonesia stock exchange for 13 year period, 1998-2010. Based on multivariate regression analysis, their findings revealed that CCC and net trade cycle (NTC) have positive relationship with the firm's profitability, while debt ratio measuring firm's riskiness was found to have negative relationship with firm's profitability, which is determined by Return on Assets (ROA).

Mathuva (2010) studied the influence of working capital management components upon corporate profitability by using a sample of 30 companies listed on the Nairobi Stock Exchange (NSE) from 1993 to 2008. He used Pearson and Spearman's correlations, the Pooled Ordinary Least Square (OLS), and the fixed effects regression models to conduct data analysis. The findings of his study were that there is a highly significant negative relationship between accounts collection period and profitability. In regard to the relationship between profitability and the inventory conversion period or the average payment period, the results were positive and significant.

2.2.3 Past Studies on Working Capital Management and Profitability in Ethiopian Countries

Tewodros Abera (2010) studies on the effects of management of working capital policies on firms' profitability. Thus, this study examined the effect of working capital investment and financing policies on firms' profitability by using audited financial statements of a sample of 11 manufacturing private limited companies in Tigray region, Ethiopia for the period of 2005 to 2009. The study used return on assets, return on equity and operating profit margin as dependent profitability variables. Accounts receivable period, inventory holding period and accounts payable period are used as independent working capital investment policy variables. Moreover, cash conversion cycle and current assets to total assets ratio are used as comprehensive measures of working capital investment policy. On the other hand, current liabilities to total assets ratio is used as measure of working capital financing policy. The two traditional measures, current ratio and quick ratio, are used as liquidity indicators. In addition, the study used firm size as measured by logarithm of sales, firm growth rate as measured by change in annual sales, financial leverage and annual GDP growth rate as control variables. Both correlation analysis and pooled panel data regression models of cross-sectional and time series data were used for analysis. The results show 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.

Mulualem Mekonnen (2011) study to investigate the impact of working capital Management on firms' profitability. In light of this objective the study adopted quantitative method of research approaches to test a series research hypothesis. Specifically, the study used survey of documentary analysis of companies' audited financial statements. Stratified sampling design was employed based on nature and turnover of companies. Then companies were selected based on simple random sampling method from each stratum's to avoid biases and represent firms from each sub classification (stratum's) within manufacturing companies. Consequently, the study selected a sample of thirteen (13) companies for the period of five years (2005-2009) with the total of 65 observations. Data was then analyzed on quantitative basis using Pearson's correlation and OLS regression analysis. The results showed that there is statistical significance negative relationship between profitability and working capital management. It means that, companies managers can create profits or value for their companies and shareholders by handling correctly the cash conversion cycle and keeping each different component of working capital to as possible optimum level. The researcher found that there is a significant negative relationship between liquidity and profitability. Moreover the study finds that there is strongly significance positive relationship between size and firm profitability. Unlike, the study found that there is no statistically significance negative relationship between debt used and firms profitability.

Ephrem Woldu (2011)The purpose of the study is to identify the impact of working capital management on the performance of the SMEs in Nifas silk and Kirkos sub cities and to give recommendations based on the problems. In doing so both Primary and secondary data was collected from 30 SMEs in those Sub cities of the capital city; Addis Ababa. The primary data was collected through the use of questionnaires and secondary data was gathered from the financial statements of the enterprises. The population of the study includes all SME's operating within organization for women

in self-employment (WISE). Data analysis was done using descriptive statistics and quantitative methods (correlation and regression).

The findings of the paper suggest that working capital is negatively affected by the time period required by the enterprises to receive their debts, pay their bills and collect cash. Beside that the financial leverage, size and current ratio of those SME's under study have impact on the availability of adequate working capital requirements.

2.3 Conclusions and Identification of Knowledge Gap

In general, the literature review indicates that working capital managed has impact upon both the liquidity and profitability of the company (Shin and Soenen, 1998; Dong and Su, 2010). The ultimate goal of any company is to maximize profits. But, preserving its liquidity is also an important objective (Shin and Soenen, 1998; Raheman and Nasr, 2007). It is not a simple task for managers to make sure that in managing working capital, liquidity is maintained in day-to-day operations and that, simultaneously, business operations run efficiently and in a profitable manner (Zariyawati et al., 2009). Some decisions that tend to maximize profitability tend to minimize the chances of appropriate liquidity. Conversely, focusing almost entirely on liquidity will tend to reduce company's potential profitability (Mathuva, 2010). The dilemma in working capital management is to achieve the desired balance between liquidity and profitability. One of the objectives should not be achieved at the cost of the other because both have their importance. Hence, working capital management should be given proper consideration and will ultimately influence the company's profitability (Raheman and Nasr, 2007; Dong and Su, 2010).

From another point of view, longer cash conversion cycle might increase profitability. It can happen because large inventories and a generous trade credit policy may lead to high sales. Larger inventories decrease stock-out risks. Trade credit may stimulate sales because it allows customers to assess product quality before paying (Long, Maltiz and Ravid, 1993; and Deloof and Jegers, 1996). However, corporate profitability might also decrease with cash conversion cycle, if costs with higher investments in working capital are higher and rise faster than the benefits of holding more inventories and

granting more inventories and trade credit to customers (Deloof, 2003). Moreover, shortening the cash conversion cycle could harm the companies' profitability; reducing the inventory conversion period could increase the shortage cost; reducing the receivables collection period could make the companies lose their good credit customers; and lengthening the payable period could damage the companies' credit reputation. Shorter cash conversion cycle is associated with high opportunity costs, and longer cash conversion cycle is associated with high carrying costs (Nobanee, 2009).

Even if, the literature review indicated that working capital management has impact on the profitability of the firm but there still is ambiguity regarding the appropriate variables that might serve as proxies for working capital management as a whole. This problem was creating misinterpretation of working capital meaning by earlier researchers like Mueller (1953) and Grablowsky (1976).

As a result, the researcher like Mueller (1953) and Grablowsky (1976) tried to identify major relevant variables which are missed or not included in previous studies. Accordingly, unlike the previous studies the researcher run the regression for gross operating profit together with all selected major relevant variables to see their impact on firm's profitability. Here by including new variables (current ratio and sales growth as a measure of liquidity and profitability others usual), running the regression by including all variables would enhance the finding and fill the problem of missing important variables which was observed in previous studies. In general the researcher believed that, the above actions would fill the gap identified in this study.

Further. According Deloof (2003) had defined profitability as gross operating income that is measured by sales less cash costs of goods sold, and divided by total assets less financial assets, which financial assets refer to shares in other corporations that formed as substantial segment of total assets. According to Deloof (2003), return on assets is not included as profitability measurement in view that for firm that has mostly financial assets on its balance sheet, there is less influence of the firm's operating activity towards the return on assets of the firm. Hence, financial assets are excluded from total assets in the computation of gross operating income. Other researchers have also supported and applied gross operating profit as measurement of profitability, which is

computed as sales less cost of goods sold, divided by total assets less financial assets (Lazaridis and Tryfonidis, 2006; Gill, Bigger and Mathur, 2010; Dong and Su, 2010; and Napompech, 2012). And some researchers such as Moss and Stine (1993); Eljelly (2004); Lazaridis and Tryfonidis (2006); Uyar (2009); Zariyawati, Annuar, Taufiq and Abdul Rahim (2009); Nor Edi Azhar and Noriza (2010); Charitou, Elfani and Lois (2010); Akbas, Caliskan and Durer (2011); and Charitou, Lois and Halim (2012). Mention that CCC as one of the measurements of WCM in their study.

Finally, No research has been done in spite of the learned impact in the area of the provision of empirical evidence in support of the impact of working capital management on firm's profitability in Ethiopian Somali regional state. Given this lack of empirical studies, it is hoped that this study fill a gap and provide useful support for better understanding of the impact of working capital management on firms profitability in Ethiopian Somali regional state of manufacture companies.

Summary of Past Studies Findings
The summary of the past studies findings is indicated as per
Table 2.1 below.

Table 2.1: Summary of Past Studies Findings

Authors	Sample and Period of Study	Results
Shin and Soenen (1998)	58,985 listed American firm years during the period of 1975 to 1994	Strong negative association between the interval of the firm's net-trade cycle and profitability.
Deloof (2003)	1,009 large Belgian nonfinancial corporations from 1992 to 1996	A significant negative relationship between gross operating income with the number of days accounts receivable, inventories and accounts payable.
Lazaridis and Tryfonidis (2006)	131 corporations listed in Athens Stock Exchange during time interval of 2001 to 2004	A negative association between gross operating profit, with cash conversion cycle as indicator for effectiveness of working capital management.
Gill, Biger and Mathur (2010)	88 American manufacturing firms listed on the New York Stock Exchange for a period of 3 years from 2005-2007	A negative association between gross operating profit and average days of accounts receivable. They also found that there is a positive relationship between cash conversion cycle and profitability, while negative relationship discovered between accounts receivables and firm's profitability.
Nobanee, Abdullatif and AlHajjar (2011)	34,771 Japanese non-financial firms listed on the Tokyo Stock Exchange from the period of 1990 to 2004	A strong negative association between the firm's cash conversion cycle and its profitability in all the samples studied apart from consumer goods and services firms.
Eljelly (2004)	29 joint stock firms in Saudi Arabia over a period of 1996 to 2000	A significant negative relationship between firm's profitability and liquidity position measured by current ratio and cash gap.
Afza and Nazir (2007)	208 non-financial public limited firms listed on Karachi Stock Exchange from 17 diverse industrial sectors from 1998 to 2005	A negative association between the firms' profitability and the extent of aggressiveness of working capital policies in terms of investment and financing perspectives.
Uyar (2009)	166 merchandise and manufacturing firms from seven industries (excluding services companies) listed on the Istanbul Stock Exchange for year 2007	A significant negative relationship between CCC with firm size and profitability. Retail/wholesale industry reported the least CCC's mean value with an average of 34.58 days, while textile industry recorded as the topmost/uppermost CCC average of 164.89 days.

Falope and Ajilore (2009)	50 Nigerian non-financial firms listed on the Nigerian Stock Exchange from 1996 to 2005.	A significant negative association between net operating profit and the average collection period, inventory turnover, average payment period and cash conversion cycle. Besides that, they also found that there is no substantial difference between large and small firms on the impacts of WCM.
Erasmus (2010)	319 firms (159 listed and 160 delisted) South African industrial firms, listed on the Johannesburg Securities Exchange from 1989 to 2007	A significant negative relationship between firm's profitability as measured by return on assets with its net trade cycle (NTC), debt ratio and liquidity ratio.
Charitou, Elfani and Lois (2010)	43 industrial firms listed on Cyprus Stock Exchange for a period of 10 years from 1998 to 2007	Working capital management as represented by CCC and its major segments such as days in inventory, day's sales outstanding and creditor's payment period have an inverse relationship with firm's profitability, which is measured by return on asset (ROA).
Karaduman, Akbas, Caliskan and Durer (2011)	127 listed corporations in the Istanbul Stock Exchange from year 2005 to 2009	They found that profitability (ROA) can be improved by reducing CCC.
Charitou, Lois and Halim (2012)	718 firms listed on the Indonesia stock exchange for 13 year period, 1998-2010.	CCC and net trade cycle (NTC) have positive relationship with the firm's profitability, while debt ratio measuring firm's riskiness was found to have negative relationship with firm's profitability, which is determined by Return on Assets (ROA).
Zariyawati, Annuar and Abdul Rahim (2009)	1628 firms from six distinct economic segments listed in Bursa Malaysia during year 1996 to 2006.	A strong negative significant association between cash conversion cycle and profit achieved by the firms. Thus, based on their finding, firms are able to accomplish higher profitability by shortening their cash conversion phase.
Nor Edi and Noriza (2010)	172 listed firms in Main Board of Bursa Malaysia from year 2003 to 2007.	A significant negative relationships between working capital segment such as cash conversion cycles, current ratio, current asset to total asset ratio, current liabilities to total asset ratio and debt to asset ratio with firm's performance in terms of firm's value that is measured by Tobin Q and profitability measured via return on asset and return on invested capital.

Nasruddin (2006)	145 SME involved in manufacturing sector in Malaysia, from the period of 1999 to 2003	A moderate positive relationship between liquidity and profitability, which implied that profitable firms have higher liquidity positions.
Tewodros Abera (2010)	sample of 11 manufacturing private limited companies in Tigray region, Ethiopia for the period of 2005 to 2009	There is negative relationship between CCC and profitability measures; No significant relationship between current assets to total assets ratio and profitability measures has been observed
Ephrem W	30 SMEs in those Sub cities of the capital city; Addis Ababa for period(2007-2011)	The findings of the paper suggest that working capital is negatively affected by the time period required by the enterprises to receive their debts, pay their bills and collect cash. Beside that the financial leverage, size and current ratio of those SME's under study have impact on the availability of adequate working capital requirements.
Mulualem Mekonnen (2011)	the study selected a sample of thirteen (13) companies for the period of five years (2005-2009) with the total of 65 observations	There is negative relationship between accounts payable period ,inventory holding day, account receivable days, CCC and profitability measures

3. Research Methodology

The previous chapter reviewed both theoretical and empirical studies, and it tried to give a brief conclusion and excavate the gap in the existing knowledge. This chapter presents research design used in this study. The remaining discussion in this chapter is organized in four sections: section 3.1 the different research approaches available to a researcher in general are discussed. Section 3.2, the specific research methods adopted with proper justification for adopting a certain method are explained. While section. 3.3, presents the research objective and hypotheses. And data sources are presented in section 3.4. Finally, conclusions along with the link between hypotheses.

3.1. Research Approaches

Research is a process of systemic and methodical inquiry and investigation to increase knowledge. Since discipline is established by developing a body of knowledge, every research should add new knowledge to the body of existing data. Research paradigm or world view or epistemology is described as a holistic approach underlying a research approach (Kassim 2001 and Creswell 2009). It reflects the philosophy of knowledge or how we reach the knowledge while approach/methodology focuses on the strategies of how we come to know (Trochim 1998). Therefore, according to Creswell (2009), there are three alternative strategies of inquiry: qualitative, quantitative and mixed approaches. These approaches are different in terms of their philosophical assumptions as well as techniques used in data collection, analysis and interpretation, and the discussions in the subsequent sections present these three approaches of research. Specifically, Section 3.1.1 presents quantitative research approach while sections 3.1.2 and 3.1.3 present respectively qualitative and mixed methods research approaches.

3.1.1 Quantitative Research Approaches

Quantitative research is the one in which the investigator primarily uses positivist claims for constructing knowledge. Positivists believe that reality is stable and can be observed and described from an objective viewpoint i.e. without interfering with the phenomena being studied (Philips, 1990). This often involves manipulation of reality with variations in only a single independent variable. Predictions can be made on the

basis of the previously observed and explained realities and their inter-relationships. Positivism has also had a particularly successful association with the physical and natural sciences (Philips, 1990).

Quantitative research places the emphasis on measurement when collecting and analyzing data. Quantitative research is defined, not just by its use of numerical measures but also that it generally follows a natural science model of the research process measurement to establish objective knowledge (that is, knowledge that exists independently of the views and values of the people involved). Quantitative research can be used in response to relational questions of variables within the research (Leedy and Ormrod (2001) cited in Carrie, 2007).

Well designed and implemented quantitative research has the advantage of making generalizations to a wider population from the sample. To enhance the generalization of findings, quantitative research approach follow standardized procedures in sample selection, instrument design, implementation and analysis. Standardization in turn enhances the reliability of findings and alleviates the impact of investigator and subjects biases. Despite these advantages, quantitative research design has a number of limitations: First, it be little's human individuality and the ability to think. Second, it fails to provide the researcher with information on the context of the situation where the studied phenomenon occurs. Third, it will have limited outcomes to only those outlined in the original research proposal due to closed type questions and the structured format and finally, quantitative research appears to lack flexibility in design which may be crucial when additional information revealed through data collection needs further exploration for knowledge and lack interpretive and exploratory examination of a research problem (Creswell, 2003). A quantitative research approach employs strategies of inquiry such as experiment and survey; collects information using present standardized instruments; and uses statistical methods in describing patterns of behavior and generalizing from sample to populations. Under the experimental research, the researcher investigates the treatment of an intervention into the study group and then measures the outcomes of the treatment (Leedy and Ormrod whereas, survey research provides quantitative or numeric description of research trends

attitudes or opinions of a population by studying a sample of population. It includes cross-sectional (data will be collected in one point in time) and longitudinal studies (data will be collected through time with different interval) using questionnaires, structured interviews and documentary reviews for data collection, with the intent of generalizing from the sample to the population (Creswell, 2009). (2001) cited in Carrie, 2007). The use of survey permits the investigator to study more variables at one time than is typically possible in experiments (Carrie, 2007)

3.1.2 Qualitative Research Approach

Qualitative research approach is the one in which the investigator often makes knowledge claims based on the multiple meanings of individual experiences, socially and historically constructed meanings, participation in issues, collaboration or change oriented with an intent of developing a theory or pattern. In contrast to quantitative research design, qualitative approach is rooted on the philosophy constructivist. Constructivists contend that only through the subjective interpretation of and intervention in reality can that reality is fully understood (Mertens, 1998). The study of phenomena in their natural environment is the key to the constructivist's philosophy (Mertens, 1998). This approach tries to examine experiences and events within their natural setting and understanding a phenomenon under investigation in its entirety (Creswell, 2003). Marshall and Rossman (1999) noted that qualitative research emphasizes meanings (words) rather than frequencies and distributions (numbers) when collecting and analyzing data. Qualitative research is also described as an unfolding model that occurs in a natural setting that enables the researcher to develop a level of detail from high involvement in the actual experiences. There are different types of research designs that use qualitative research techniques to frame the research approach. As a result, the different techniques have a dramatic effect on the research strategies explored. What constitutes qualitative research involves purposeful use for describing, explaining, and interpreting collected data. Marshall and Rossman (1999) further emphasized that qualitative research is less structured in description because it formulates and builds new theories. Qualitative research can also be described as an effective model that occurs in a natural setting that enables the researcher to develop a

level of detail from being highly involved in the actual experiences (Creswell, 2003). A qualitative research approach uses strategies of inquiry including narratives, ethnographies, case studies, observations, interviews, and the findings are communicated subjectively through descriptions using words rather than numbers (Creswell, 2003, p.186-187). Qualitative research design has its own advantages and disadvantages. The advantage of a qualitative research design is that it is flexible and emergent without being constrained by standardized procedures that the investigator to explore and understand phenomena entirely in their natural setting (Creswell, 2003). Wimmer and Joseph (2006) also justified that qualitative techniques can increase a research's depth of understanding of the phenomenon under investigation. Another advantage of qualitative methods is that they allow the researcher to listen carefully to what participants say, engage with them according to their individual personalities and styles, and use "probes" to encourage them to elaborate on their answers. Further, it provides a holistic view of the phenomena under investigation and the researcher have an ability to interact with the research subjects in their own language and on their own terms in spite of the above advantage, qualitative research design has its own limitations:

First, it required much time for data collection, analysis and interpretation i.e., the researcher has to spend a considerable amount of time in the research setting in order to examine holistically and aggregately, the interactions, reactions and activities (Babbie, 1995). Lack of standardized rules reduces the objectivity of the findings, the personal view and stand of the researcher may induce bias in the interpretation of the data, and the findings cannot be statistically generalized for a broader population under investigation (Creswell, 2003). Finally in qualitative research the researches arrives on different conclusions based on the same information depending on the personal characteristics of the researcher (subjectivity) and inability to investigate causality between different research phenomena.

3.1.3 Mixed Methods Approach

Creswell (2009) defined that mixed approach is one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problem. The data collection also involves gathering both numeric information (e.g., on instruments) as well as text information (e.g., on interviews) so that the final database represents both quantitative and qualitative information. As a result, when methods are combined, the advantages of each methodology complement those of the other, making a stronger research design that will yield more valid and reliable findings. Indeed, the inadequacies of individual methods are reduce Sale et al (2002) instanced that it has often been observed very accurately that no single research methodology is intrinsically better than any other methodology, many authors calling for a combination of research methods in order to improve the quality of research. Researchers incorporate methods of collecting or analyzing data not only numerical data, which is customary for the quantitative research, but also narrative data, which is the norm for qualitative research in order to address the research question(s) defined for a particular research study. The goal for researchers using the mixed methods approach is to draw from the strengths and minimize the weaknesses of the quantitative and qualitative research approaches (Carrie, 2007).

In general, according to McKerchar (2008) the choice among the three research approaches is guided by mainly the research problem apart from the underlying philosophy of each research method. That is, whether the research problem is based on a framework developed deductively through a review of the literature and prefigured information to be collected in advance of the study or to allow it to emerge from participants in the theses or both.

3.2 Researcher Method Adopted

The choice among the three research approaches is guided by mainly the research problem apart from the underlying philosophy of each research method (McKerchar 2008). That is, whether the research problem is based on a framework developed

deductively through a review of the literature and prefigured information to be collected in advance of the study or to allow it to emerge from participants in the inquiry process. Also the type of data may be numeric information to be gathered on scales of instruments or more textual information, recording and reporting the voice of the participants. The quantitative method along with survey design strategy of inquiry was used. More specifically, this study employed structured documentary reviews. In the context of this the following subsection presents the survey design together with its components.

3.2.1 Survey design

The study assessed the impacts of working capital management on the firm's profitability of selected manufacturing companies in Ethiopian Somali regional state to achieve the research objective and to test the hypotheses, the study adopted quantitative research approach. The researcher chooses survey research as a strategy of inquiry. The adoption of the survey design, in the study, would have the following benefits; first, generalization process from sample to population is the intention of a quantitative as opposed to a qualitative researcher. In this type of research, only one sample of subjects is studied and based upon characteristics of that sample, generalization is made back to the population where the sample is formerly chosen. Second, it would give a chance for the researcher to produce data based on empirical figures and thirdly, using survey design was economically viable. This means, it can produce a large amount of data in a short time with a low cost. Accordingly, the data for the study was collected using structured documentary reviews of companies' financial statement (especially balance sheet and income statement). Further, the survey was cross sectional, in which data are collected at one point in time. The subsequent sections present a discussion of the structured survey of documents, sampling design and data analysis in an orderly manner.

3.2.1.1 Quantitative aspect: structured survey of documents

The data for the study was collected using structure documentary reviews of target companies audited financial statements including balance Sheet and Income Statement of sample companies for a period of six years (2009-2014). The researcher considers

six years because of limited number of firms having an operating life of more than six years. Reviewing selected companies balance sheet and income statement items would be the right avenue to determine coefficient of correlation and regression analysis between working capital management and firm's profitability. Additionally, it was preferred for its convenience and cost effectiveness. However, the main problem of using secondary data would be lack of accessibility of getting relevant source of information directly from selected companies (lack of willingness) and its reliability. By considering the above problems, Most of the required data was obtained from the financial statements submitted to the Ethiopian Somali regional Revenues Authority (ESRRA), by the companies for tax purpose.

3.2.1.2 Sampling Design

The total population of the study is all manufacture firms sectors located and operating within the boundary of Ethiopian Somali Regional State. According to the international standard industrial classification (ISIC Revision-4 cited in central statistics agency (CSA, 2004, p.1) defined manufacturing activity as “the physical or chemical transformation of materials or components into new products, The assembly of the component parts of manufactured products is also considered as manufacturing activities” .Besides to the ISIC classifications manufacturing enterprises involves industrial groups or types such as:

- Manufacture of food products: manufacture of vegetable and animal oils and fats, manufacture of dairy products, manufacture of bakery products, manufacture of cocoa, chocolate and sugar confectionary; grain mill services;
- Manufacture of textiles: preparation and spinning of textile fibers, manufacture of made up textile articles, manufacture of carpets and rugs; manufacture of wearing apparel, dressing and dyeing of fur;
- Manufacture of wood and products of wood and cork;
- Manufacture of paper and paper products; publishing, printing and production of recording media;

- Manufacturing of chemicals and chemical products;
- Manufacturing of other non-metallic mineral products (manufacture of glass and glass products, manufacture of ceramic and clay products, manufacture of articles of concrete, cutting, shaping and finishing of stones);
- Manufacture of fabricated metal products, except machinery and equipment; manufacture machinery and equipment manufacture of parts and accessories for motor vehicles and their engines;
- Manufacture of furniture and manufacture jewelry and related articles and other manufacturing enterprises not elsewhere mentioned.

Since there is a lot of business operation which existing in Ethiopian Somali regional state. This study conduct only manufacturing firms. Similarly, choosing the right and appropriate study area for the problem identified may enhance the output of the study and help to achieve its objective. Therefore, the decision to use manufacturing companies was based on the following two aspects that enhance the validity of the study. First, manufacturing companies represent an appropriate sample in order to analyze working capital management. Because all of three components working capital (inventory, account receivable and payable) usually play important roles in the manufacturing sector and comparability of the sample companies will be enhanced. For instance, in our country service companies most probably hold much less inventory and accounts receivable. Hence, they represent a less reliable source of information for this specific study. Second, most of the previous studies in different countries in relation to this topic were conducted on manufacturing companies like by Gill, Biger and Mathura (2010) Uyar (2009) Shin and Soenen (1998),

Therefore, according to data from trade and industry bureau, in Ethiopian Somali regional state, formally registered manufacturing companies' until end of the year 2008 were about 32 firms. Since, the study covered only six years data (from 2009 – 20014)

manufacturing companies registered after end of year 2014 were not eligible for the study. Therefore, the total number of population eligible and used for the study was 32 manufacturing companies found in Ethiopian Somali regional state.

The sampling procedure employed in this study was stratified sampling method based on the afore-mentioned ISIC classifications of manufacturing enterprises. Among the above listed types of manufacturing enterprises, three types of manufacturing firms are chosen based on purposively (see appendix 1).

Hence, Stratified sampling method has the following advantage first, it improves the accuracy of the sample, and second, is one tool to reduce selection bias.in designing a sample, in order to determine the sample size of this study the researcher selected a total sample of twenty five (25) companies by using purposively, because of the willingness and reliability of the data,

3.3 Research Objective and Hypotheses Development

Therefore, in light of the above research objective, several statements of supposition can be made in view of the impacts of working capital management components on firms' profitability. The following discussion covers the hypotheses that this study attempted to test. Since The key objective of managing working capital is to achieve an optimum level in each segments of the working capital, such as receivables, inventory and payables (Filbeck and Krueger, 2005, Afza and Nazir, 2007) that enables equilibrium to be maintain between risk and efficiency (Afza and Nazir, 2007). Thus, finance manager has emphasised in maintaining optimal current assets and current liabilities in order to achieve optimal working capital position (Lamberson, 1995) and maximisation of firm's value (Haworth and Westhead, 2003, Deloof, 2003, Afza and Nazir, 2007).

Adequacy of liquidity level is important in order for firm to improve its value as it allows for contingency purposes in operations and offers flexible financing at a lower cost (Eljelly, 2004). In addition, Smith (1980) had highlighted on the WCM goals, which involves the trade-off between liquidity and profitability. Thus, firm needs to balance its

liquidity and profitability level as if firm is wholly focussing in profit maximisation, the sufficiency of the firm's liquidity position will be affected and vice versa (Nasruddin, 2006)

Whereas, Van Horne and Wachowicz (2004) pointed out that excessive level of current assets have a negative effect on firm's profitability, while lower level of current assets lead to lower liquidity and stock-outs, and result in difficulties of maintaining smooth operations. Therefore, depend upon the above theoretical basis the first hypothesis of the study is developed as follows:-

HP₁: There is positive relationship between efficient working capital management and firm's profitability.

Meanwhile, Besley and Brigham (2005) define a cash conversion cycle as average period of time taken from acquisition of raw materials being paid to receivables related with sale being collected. Cash conversion cycle is deemed as the most dominant and prevalent measurement for efficiency of working capital management (Gill, Biger and Mathur, 2010; and Nobanee, Abdullatif and AlHajjar, 2011). Thus, the Cash Conversion Cycle is a powerful measure for assessing how well a company is managing its working capital. The longer this time lag, the larger the investment in working capital (Deloof, 2003). Shorter cash conversion cycle could be associated to high profitability because the longer the cash conversion cycle the greater the need for expensive external financing. Therefore, by reducing the period that cash is tied up in working capital, companies can operate more efficiently (Nobanee and AlHajjar, 2009).

Cash conversion cycle can be shortened by reducing the inventory conversion period via processing and selling goods more quickly; or by decreasing the receivables collection period via speeding up collections; or by lengthening the payables deferral period through slowing down payments to suppliers (Nobanee, 2009). This increases

companies' efficiency of internal operations and results on higher profitability and higher market value.

Delaying payments to suppliers allows companies to assess the quality of the products that were bought, and can be an inexpensive and flexible source of financing. But we should bear in mind that late payment can have a very high implicit cost whenever early payment discounts are available. Since, money is also locked up in working capital, the greater the investment in current assets, the lower the risk but also the lower the profitability obtained (Falope and Ajilore, 2009).

From another point of view, longer cash conversion cycle might increase profitability. It can happen because large inventories and a generous trade credit policy may lead to high sales. Larger inventories decrease stock-out risks. Trade credit may stimulate sales because it allows customers to assess product quality before paying (Long, Maltiz and Ravid, 1993; and Deloof and Jegers, 1996). However, corporate profitability might also decrease with cash conversion cycle, if costs with higher investments in working capital are higher and rise faster than the benefits of holding more inventories and granting more inventories and trade credit to customers (Deloof, 2003). Moreover, shortening the cash conversion cycle could harm the companies' profitability; reducing the inventory conversion period could increase the shortage cost; reducing the receivables collection period could make the companies lose their good credit customers; and lengthening the payable period could damage the companies' credit reputation. Shorter cash conversion cycle is associated with high opportunity costs, and longer cash conversion cycle is associated with high carrying costs (Nobanee, 2009).

An optimal level of working capital would be that in which a balance between risk and efficiency is attained, and both carrying costs and opportunity costs are minimized. It requires continuous monitoring to maintain the proper level of the various components of working capital, i.e., cash receivables, inventory and payables, and the second hypothesis is developed as follows

HP₂: There is a negative relationship between of Accounts Receivable period (ARP) towards the firm's profitability,

The level of accounts receivable is expected to have an impact on a company's profitability (Emery 1987; Mian and Smith 1992; Deloof and Jegers 1999; Peel et al. 2000; Garcia-Teruel and Martinez-Solano 2010a). A higher accounts receivable show that the company takes longer time to collect amounts owed by customers while a shorter accounts receivable means that the company is able to collect amount owed by customers at a faster time period. An increase in the level of accounts receivable may help stimulate the sales of a company (Garcia-Teruel and Martinez-Solano 2010a). By offering extended credit to customers, companies may improve their profitability in the sense that it can entice customers to purchase more than is required. Garcia-Teruel and Martinez-Solano (2010b) maintain that companies grant more trade credit to their customers when they have lower sales growth. High level of accounts receivable may also maximise profitability because it can serve as a quality guarantee to customers (Smith 1987; Pike and Cheng 2001). By delaying payment, customers are able to use the period between purchase and payment to check for the quality of the goods and/or services. This situation gives customers the confidence in purchasing a company's products because they can return the products if the quality is not up to standard without having to pay. Garcia-Teruel and Martinez-Solano (2010b) argue that even though customers can still return the products and a refund demanded, this process is more difficult and costly. Giving customers' time to pay also improves companies' profitability by sustaining the long-term relationship with customers (Ng et al. 1999; Wilner 2000). This long-term relationship means that customers will continue to do business with the company, which can guarantee future profitability maximisation.

Another profitability enhancement benefit of accounts receivable is the reduction of inventory related costs. Since the granting of credit to customers helps increase the sales, it reduces the level of inventory kept. This reduction in inventory leads to a reduction in the various costs associated with keeping inventory and therefore improves profitability. Garcia-Teruel and Martinez-Solano (2010b) content that by relaxing credit period,

companies can reduce the storage costs of the excess inventories accumulated. A positive relationship between accounts receivable period and profitability was empirically confirmed by previous researches (Nobanee 2009; Ramachandran and Janakiraman 2009).

High level of accounts receivable can however have a negative effect on companies' profitability. In the first instance, the granting of credit represents a cost to the company (Cheng and Pike 2003) and therefore a reduction in profitability. A company may have to seek alternative sources of funds to finance the investment in customers as a result of the credit granted. The use of internally generated funds to finance the credit granted to customers may reduce profitability because it will represent the opportunity cost of investing such an amount in other profitability enhancement ventures. Alternatively, the use of external funds may equally lead to profitability minimisation because the company will have to pay interest on those amounts borrowed. Accounts receivable may also impair company profitability because of the occurrence of bad debt (Pike and Chang 2001). The problem of adverse selection could cause a company to offer credit to a customer with a poor credit history, which may end up as bad debt and therefore dwindle profitability. Also, the problem of morale hazard may affect the profitability of a company because of the intentional decision of a customer with a good credit to decide not to pay for the goods and services after receipt and probably consumption. Cheng and Pike (2003) maintain that accounts receivable means that the company is financing the buyers' inventory and also bearing the credit risk. Majority of prior studies have postulated a negative association between accounts receivable period and profitability (see, Deloof 2003; Garcia-Teruel and Martinez-Solano 2007; Sen and Oruc 2009; Dong and Su 2010; Gill et al. 2010). In conclusion, it can be said that a reduction in the level of accounts receivable may result more in performance maximisation than the increase in accounts receivable period. In light of the above theoretical grounds the hypothesis developed as above:-

HP₃: There is a negative relationship between of Inventories holding Days (IHD) towards the firm's profitability.

The level of inventory kept by a company will influence its profitability (Gill et al. 2010; Ching et al. 2011). A higher inventory means that inventory is held in stock for longer time period whilst a lower inventory indicates that inventory is sold more quickly. There are arguments for and against the keeping of inventory by companies in relation to profitability. According to Chowdhury and Amin (2007), both excessive and inadequate inventory is harmful for a company. One of the arguments in favour of a positive effect of high-level inventory on profitability is the increase in sales (DeLoof 2003). A company that keeps high level of inventory may be able to increase its sales, which may improve profitability. High level of inventory means that customers will always have access to the items they want. Also, the availability of inventory will help prevent loss of client business. This is because customers will be rest assured of getting what they want whenever they come to make purchases. The availability of inventory will also improve company profitability because it will prevent the company rushing into making emergency buying. Emergency buying normally cost higher than normal purchase because it is usually unarranged. At the same time it may also cause defections in the production line, which may negatively affect profitability because the company may be unable to get the required standard of quality due to the urgency of the purchase.

Another profitability maximisation factor of having a high level of inventory is the ability to avert trading interruptions (Gill et al. 2010). A stock out situation can have a major downward impact on profitability because of its associated cost. For example, having no stock will damage the reputation of the company, which may cause both current and future customers to take their businesses elsewhere. It will also increase the cost of production without a corresponding increase in revenue because of idle time situation. This will eventually increase the cost of the goods of the company and decrease the profit margin, thereby reducing profitability. As argued by Chowdhury and Amin (2007), inadequate inventory usually interrupts the normal operations of a business and impairs profitability. Having a high level of inventory may also rescue a

company from price fluctuations (Blinder and Maccini 1991). Due to the increasing prices because of inflation, hoarding inventory can save a company a lot of money, which may improve profitability. A positive relationship between inventory holding period and profitability was found by previous researches including: Mathuva (2010), Padachi (2006), Nobanee (2009), Christopher and Kamalavalli (2009) and Nobanee and Alitajjar (2009b).

On the other hand, having a high level of inventory may also result in a reduction in company profitability. This is because the high level of inventory represents amount of money locked up. Capital locked up in inventory may cause a sub-optimisation of financial resources because such an amount could have been invested in a profitable project in order to improve profitability. Also, the lock up of capital in inventory may require the company to sort after short-term financing, which may increase the financing cost to the company and thereby reduce profitability. High inventory may also minimise profitability in the sense that it will increase the associated costs of holding inventory. Such holding costs include: security cost, rent, heating, obsolesce, theft etc. According to Koumanakos (2008), excessive inventory frequently compensates for sloppy and inefficient management, poor forecasting and inadequate attention to process and procedures. However, Nobanee and AlHajjar (2009a) suggest that care must be taking with actions to reduce the inventory level in order to avoid inventory shortages that could cause customers to buy from competitors. Empirical examination by prior studies found a negative association between inventory holding period and profitability (see, Deloof 2003; Nobanee and Alhajjar 2009b; Falope and Ajilore 2009, Raheman and Nasr 2007). The above arguments indicate that even though too low or too high level of inventory may have positive effect on performance, the results of a reduced level of inventory may have more positive influence on company performance than that of high level. Subsequently,

HP₄: There is a negative relationship between of Accounts Payable Days (APD) towards the firm's profitability,

There are many reasons for expecting a significant relationship between accounts payable period and company profitability. A higher value of the specifies that the company wait longer before settling suppliers and a lower value of the accounts payable period denotes the short time frame that it takes a company to pay its debts to suppliers. For a negative relationship, it has been argued that the loss of discount for early payment may affect company profitability (Ng et al. 1999). Asking time to pay means that a company must forgo the cash discount usually offered by suppliers for early payment. And, as maintained by (Ng et al. 1999) the amount of cash discount can be substantial. Also, the decision to accept or request for credit period results in an inherent cost to a company, which diminishes profitability. A research by Ng et al (1999) indicated that the combination of the 2 per cent discount for payment within 10 days of supplies and a net period ending on 30 defines an implicit interest rate of 43.9 per cent. Therefore, the high inherent cost involved in credit period will cause a reduction in profitability. Researchers such as Padachi (2006), Deloof (2003), Garcia-Teruel and Martinez-Solano (2010b), Lazaridis and Tryfonidis (2006) and Nobanee (2009) all found a negative association between accounts payable period and profitability. For a positive relationship, it is found that credit period results in a reduction in transaction cost (Ferris 1981; Emery 1987; Petersen and Rajan 1997), thereby increasing profitability. This is because in the absence of credit period, companies may have to pay for merchandise as and when purchases are made. This would have resulted in an increase in the number of times a company has to make payment and therefore increasing the transaction cost. However, credit period allows companies to accumulate amounts owing and pay them at a period interval according to the credit period agreement, such as monthly or quarterly. Another benefit of credit period to companies as far as profitability maximisation is concerned is the ability to overcome financial constraint (Schwartz 1974; Pike and Cheng 2001). One major contributing factor to company poor profitability and failure, especially SMEs is financial constraint; however, credit period serves as a financial facility to SMEs. Due to their inherent characteristics do not get access to capital market and therefore rely

on suppliers as a source of financing. This has made accounts payable an important source of short-term funds for most firms (Berger and Udell 1998; Deloof and Jegers 1999; Wilner 2000; Garcia-Teruel and Martinez-Solano 2010a). Garcia-Teruel and Martinez-Solano (2010a) maintain that accounts payable represents a source of short-term financing used by companies to finance a significant portion of firms' current assets. But, Nobanee and AlHajjar (2009a) say that a company should be careful not to harm its own credit reputation by asking too much credit from suppliers. Mathuva (2010) found a positive and highly significant association between accounts payable period and profitability, therefore maintaining that companies' profitability are enhanced when they take advantage and use suppliers' credit for working capital needs. A positive relationship was also found by the following researchers: Falope and Ajilore (2009), Vishnani and Shah (2007), Raheman et al (2010), Sen and Oruc (2009) and Dong and Su (2010). Judging from the two spectrum of stance, it can be deduced that the benefit to companies of having a shorter accounts payable period is more than the benefit of having a lengthy accounts payable period.

HP₅: There is a negative relationship between of cash conversion cycle (CCC) towards firm's profitability,

The variation in a company's profitability can be explained by its cash conversion cycle. A positive cash conversion cycle denote that it takes more time for a company to pay its suppliers than it takes to collectively sell inventory and collect amounts owed by customers and vice versa. A shorter cash conversion cycle may improve companies profitability because it will reduce or avoid the over reliance on external finance. In this case the company may be financing part of its current assets with suppliers' credit, thereby avoiding the need for short-term loan, which can be very expensive, particularly SMEs. Another profitability enhancement benefit of a shorter cash conversion cycle is the fewer financial resources of SMEs (Nobanee 2009). Due to the lack of access to the capital markets, SMEs may improve profitability by relying on suppliers' credit. A shorter cash conversion cycle may also maximise profitability because it indicates the efficiency of using WC. An efficient use of WC means that the

company is able to quickly convert inventory into sales and at the same time fast in collecting receivables, but slow in paying suppliers. For example, Nobanee (2009) maintains that efficiency of WCM is based on the principle of speeding up cash collections as quickly as possible and slowing down cash disbursements as slowly as possible. Mathuva (2010) postulated a negative association between cash conversion cycle and profitability, and therefore argued that minimising the investment in current assets can help in boosting profitability. However, pursuing such an aggressive strategy may result in lower company profitability. This is because trying to sell to customers on immediate cash payment basis or collecting amount owned as quickly as possible may deter customers from patronising the company's products. Also, delaying payments to suppliers may impair profitability of companies because of the lost saving on cash discount available. Negative association has been postulated between cash conversion cycle and profitability of companies (see, Nobanee et al. 2010; Uyar 2009; Wang 2002; Zariyawati et al. 2009; Lazaridis and Tryfonidis 2006; Garcia-Teruel and Martinez Solano 2007).

On the other hand, a lengthy cash conversion cycle may improve company profitability by increasing sales (Deloof 2003). This approach will allow the company to extend more credit to customers, which may entice them to purchase more. In the same vein, having more inventory in stock means that customers will always have what they want, which may lead to higher sales and improve profitability. Also, a lengthy cash conversion cycle means that the company will pay suppliers upfront. This has the advantage of improving the profitability of the company because of the cash discount to be enjoyed. However, paying suppliers immediately upon purchases and extending more credit period to customers may require the company to seek extra funding. But these extra funds will represent a cost to the company because of the interest payment involved. Researchers including: Padachi (2006), Dong and Su (2010), Sen and Oruc (2009), Raheman et al (2010) all found a positive association between cash conversion cycle and profitability. In conclusion, it is fair to say that shortening the CCC may improve companies' performance than having a lengthy CCC.

HP6:-There is significant Negative relationship between liquidity and profitability.

The researcher predicted that profitability may have a relation with firm size (measured in terms of logarithm of sales). The company size may affect liquidity and profitability in different ways. Larger firms are deemed to have a negative impact in obtaining financing and faced higher cost of external funding (Akinlo, 2012). However, on the other hand, larger firms also faced coordination problems which can negatively influence performance, unlike smaller firms which are simple to monitor and organized (Falope and Ajilore, 2009). On the one hand, large companies may be able to buy inventory in large quantities in order to get quantity discounts. Further, because of their size, large companies may qualify for quantity discounts from suppliers with relatively small inventory levels. Additionally, large companies may be able to get favorable credit terms from their suppliers in terms of longer credit periods and they may have more success in their receivables collection efforts relative to small companies. Hence, having the above opportunities

HP7:- There is a negative relationship between debt used by the firms and their profitability.

3.4 Variable description

This study tried to specify the variables used under the study In order to analyze the effects of working capital management on firms' profitability the researcher identifies key variables that indicate profitability, working capital component, liquidity and other factors that influence profitability. The chosen variables include dependent, independent and some control variables. And these total of nine (9) variables including one dependent, four independent and four control variables based on the previews studies on different countries on similar topics namely, Shin and Soenen (1998), Deloof (2003) Gill, Biger and Mathur (2010) Uyar (2009) Rahemal and Nasr (2007), Zariyawati et al. (2008),

Meanwhile The choice of explanatory variables is based on the following factors: 1) alternative theories related to working capital management (for example, one theory stating that a longer cash conversion cycle increases firm profitability given that it leads to higher sales, and the opposing theory stating that corporate profitability decreases as cash conversion cycle elongates, particularly if the costs of higher investment in working capital rise faster than the benefits of holding more inventory and/or granting more trade credit to customers) and 2) working capital management variables used in previous studies conducted in other geographic jurisdictions such as Greece, Belgium, U.S., Kenya, and Turkey.

3.4.1 Dependant Variable

The dependant variable used is gross operating profit (GOP). Because it is an operating ratio and relates with operating explanatory variables used in the study, e.g. cash conversion cycle and days sales in inventory. While other researchers such as Deloof (2003) and Biger *et al* (2010). Used gross operating profit (GOP) as a profitability measure. While the independent variables refer to working capital management components that are represented by Accounts Receivable days (ARD), inventory holding days (IHD), Accounts Payable days (APD) and cash conversion cycle (CCC). Meanwhile, the control variables for this framework refer to current ratio (CR), firm size (SIZE), sales growth (GROWTH) and debt ratio (DEBT).

3.4.2 Independent Variables

Accounts Receivable days (ARD), was used as proxy for Collection Policy, and represents the average time it takes to collect payments from customers from sales of goods and services. The longer the accounts receivable period, the higher will be the investment in accounts receivable. Theoretically, the higher the investment in account receivable, the lower will be the profitability. The formula used to calculate the account receivable day is:

Accounts Receivable days (ARD) = [Ending Accounts Receivable /Net Sales] X 365 days

Inventory holding days (IHD) was used as proxy for the Inventory Policy, and stands for the average time it takes to acquire and sell inventory. The longer the inventory storage period, the higher will be the investment in inventory. In the same manner, the higher the amount invested in inventory, the lower will be the profitability of firms, and Inventory holding days (IHD) was calculated by the following formula:-Inventories Holding days (IHD) = [Ending Inventories /Costs of Good Sold] X 365 days

Accounts Payable days (APD) was used as proxy for the Payment Policy, and represents the average time between purchases of inventory and payment for it. The higher the value, the longer it takes to settle payment commitments to suppliers and hence, the lower will be the investment in working capital. And was used to calculate Accounts Payable day: Account Payable Period (APD) = [Ending Accounts Payable/ Net Purchases] X 365 days,

The Cash Conversion Cycle is a proxy for working capital management efficiency. The Cash Conversion Cycle is calculated by subtracting the Payables Deferral Period the sum of the Inventory Conversion Period and the Receivables Collection Period. It has been interpreted as a time interval between the cash outlays that arise during the production of output and the cash inflows that result from the sale of the output and the collection of the accounts receivable.

Conversion Cycle (CCC), the lower will be the investment in inventories and receivables. The longer the Cash Conversion Cycle the greater the investment in current assets hence the greater the need for financing of current assets. The formula to calculate the Cash Conversion Cycle (CCC) is: Cash Conversion Cycle (CCC) = Accounts Receivable day (ARD) + Number of days Inventories (IHD), – Account Payable Days (APD)

In order to have a reliable analysis of the effect of working capital management on firms profitability, it is common in working capital literature to use some control variables to account for various factors that may influence profitability of firms

(Deloof, 2003; Eljelly, 2004; Lazaridis and Tryfonidis, 2006; Padachi, 2006; Afza and Nazir, 2007). Accordingly, together with the above working capital management variables, some control variables that are specific to firms were taken into account in this study. Firm Size (FS), Firm Growth Rate (FGR), Current Ratio (CR), debt ratio (DR) are control variables that are specific to the firm. In order to account for Firm Size (FS), as used by different prior researchers, the natural logarithm of sales was used (Deloof, 2003; Eljelly, 2004; Padachi, 2006; Raheman and Nasr, 2007). As a proxy for Firm Growth Rate (FGR) change in annual sales $[(Sales_t - Sales_{t-1}) / Sales_{t-1}]$ was used. Current ratio as a proxy current asset divided by current liability. Finally, Debt ratio (DR) as a proxy total debt divided by total asset.

3.4.3 Control Variables

The current ratio, firm size, sales growth and debt ratio variables are included in the regression analysis for control purpose. The control variables are employed to measure the significance of association between variables and to determine the extent of the independent variables influence towards the dependent variables.

Current Ratio (CR) Based on past study conducted by Sharma and Kumar (2011), current ratio has been included in the model as control variable and is computed as current assets divided by current liabilities. Other researchers that had also included current ratio as part of the control variables in the regression model (Charitou, Lois and Halim, 2012). Current ratio has been included in the model regression partly due to its role as measuring liquidity position of the firm traditionally (Zariyawati, Annuar, Taufiq and Abdul Rahim, 2009), as compared to CCC as a dynamic measurements for liquidity management (Jose, Lancaster and Stevens, 1996). Thus, the formula for computing current ratio is as follows:-

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

Higher current ratio is associated with lower profitability and vice versa due to the trade-off relationship between liquidity and profitability. Based on past literature view, Eljelly (2004) had found a significant negative relationship between profitability and

liquidity position of firms that is computed by current ratio. Based on study conducted by Charitou, Lois and Halim (2012), there is also a negative relation reported between current ratio and profitability measured by gross operating profit (GOP).

Firm Size (SIZE)

In this study, the effect of firm size on firm's profitability is also being evaluated. The purpose of including firm size in this study as a control variable is to determine the extent of firm size effect on the study of relationship between WCM and firm's profitability. Larger firms are deemed to have a positive impact on performance in view that larger firms have various capabilities and enjoy economies of scale (Falope and Ajilore, 2009; Akinlo, 2012), faced fewer information irregularity and ability to exploit market power (Akinlo, 2012; Shepherd, 1986) both in product-markets and factor-markets as compared to smaller firms which experienced limitation in obtaining financing and faced higher cost of external funding (Akinlo, 2012). However, on the other hand, larger firms also faced coordination problems which can negatively influence performance, unlike smaller firms which are simple to monitor and organized (Falope and Ajilore, 2009).

In the past study, there are several forms of definition being adopted in measuring firm size. Based on the past study conducted, the most commonly used measurements for firm size is natural logarithm of sales (Deloof, 2003; Lazaridis and Tryfonidis, 2006; Gill, Biger and Mathur, 2010; Raheman, Afza, Qayyum and Bodla, 2010) and natural logarithm of total assets (Falope and Ajilore, 2009; Nazir and Afza, 2009; Sharma and Kumar, 2011).

In this study, firm size is measured based on natural logarithm of sales, as it is one of the most commonly used proxies for firm size. Furthermore, according to Raheman, Afza, Qayyum and Bodla (2010), the natural logarithm of sales has been applied in computation of size of firms, in view that it is able to lessen the heteroskedasticity and lower the effect of outliers in the regression model.

$$\text{Firm Size} = \ln(\text{Sales})$$

Based on past literature review, Deloof (2003); Lazaridis and Tryfonidis, 2006; Raheman, Afza, Qayyum and Bodla (2010); Akinlo (2012); Charitou, Lois and Halim (2012) had found a positive relationship between firms size with the profitability of the firms, which indicates that the larger the size of the firms, the higher the firms' profitability in view of the economies of scales enjoyed that has transformed firms to higher profitability. However, on the other hand, according to Evan off and Fortier (1988) and Michael (1985), there is a negative effect of firm size on profitability in view that the positive impact on firms' profitability as a result of economies of scale might be partly offset via diversification of assets by firms, which resulted in a lesser risk and lesser return as per the portfolio theory. Therefore, based on past literature review, the expected result on the relationship between firm size and profitability may be positive or negative relationship.

Sales Growth (GROWTH)

One of the control variables that is used in the regression by Zariyawati, Annuar, Taufiq and Abdul Rahim (2009) is $(\text{Sales}_1 - \text{Sales}_0)/\text{Sales}_0$ while Deloof (2003) computed sales growth as $[(\text{this year's sales} - \text{previous year's sales})/\text{previous year's sales}]$. Other researchers which have also included sales growth as part of the control variables in their studies are Falope and Ajilore (2009) and Nazir and Afza (2009).

Thus, in this study, sales growth is measured by the following formula:

$$\text{Sales Growth} = \frac{\text{Sales}_1 - \text{Sales}_0}{\text{Sales}_0}$$

According to Akinlo (2012), sales growth is anticipated to have a positive relation with profitability in view that higher achievement in sales growth is derived as a result of better quality of product or services, lesser time required to evaluate the quality of the

products, which leads to lower accounts receivables days and positive impact on profitability. The positive association between sales growth and profitability is also supported by other researchers (Deloof, 2003; Zariyawati, Annuar, Taufiq and Abdul Rahim, 2009; Raheman, Afza, Qayyum and Bodla, 2010).

Debt ratio (DEBT)

Deloof (2003) had also used financial debt ratio as control variable, which is measured by using financial debt divided by total assets, while Gill, Biger and Mathur (2010) defined financial debt ratio as short-term loans plus long-term loans divided by total assets. Furthermore, other researchers that have also included DEBT as control variables had measured debt ratio as total debt over total assets (Zariyawati, Annuar, Taufiq and Abdul Rahim, 2009; Nor Edi Azhar, and Noriza, 2010; Sharma and Kumar, 2011). Hence, in this study, debt ratio is computed using following formula:-

$$\text{Debt ratio} = \frac{\text{Total Debt}}{\text{Total Asset}}$$

According to Charitou, Lois and Halim (2012); they found a significant negative relationship between debt ratio and profitability of the firms, as an increase in debt level raises the interest expense and the possibility of firms defaulting, which profitability is negatively affected. This finding is supported by other studies who also found an inverse significant relationship between debt ratio and profitability (Deloof, 2003; Zariyawati, Annuar, Taufiq and Abdul Rahim, 2009).

3.5 Data Analysis Method

The aim of this section is to briefly explain the various methods that have been chosen to analyse the quantitative data.

General Consideration

The purpose of any research undertaken is to provide information in order to help answer the research question or hypothesis (Saunders et al. 2003; Zikmund 2003). Therefore, the researcher gathers raw data that is processed to generate the needed information. This transformation is aided by the use of analytical methods that convert data into information needed to make decisions (Davis 1996). There are diverse kinds of analytical methods that can be used in analysing data, however, care must be taken to ensure that appropriate analytical methods are chosen in order to arrive at the correct conclusions. As argued by Zikmund (1997), the choice of a particular method of statistical analysis depends on many factors including: (1) the type of question or hypothesis to be answered; (2) the number of variables and (3) the scale of measurement.

For the quantitative data analysis, the main objective that has been set out to answer the research question or hypothesis was “what are the impact of working capital management on firm’s profitability in Ethiopian Somali regional state?” To this end, descriptive statistics, Bivariate Analysis and multivariate analysis will be employed in meeting the objective set up above. Statistical analysis of the data was tested through statistical software package “EVIEW6” to determine the most significant and influential explanatory variables affecting working capital management on firms profitability in Ethiopian Somali regional state. Then, the results of both descriptive as well as inferential statistics results were presented by appropriate graphs and tables.

3.5.1 Descriptive Statistics

Descriptive statistics refers to the method of transforming raw data into a form that will make them easy to understand and interpret. According to Zikmund (2003), descriptive responses or observations are typically the first form of analysis. Descriptive statistics is important as the starting point in any statistical analysis because it can help in detecting any abnormalities in the data collected. As argued by Quartey (2003), descriptive analysis is particularly useful because it is a holistic approach that gives preliminary but useful characteristics of the data.

3.5.2 Bivariate Analysis

Bivariate analysis refers to the tests of differences or measures of association between two variables at a time (Zikmund 2003). The tests of differences refer to an investigation of hypothesis that two or more differ with respect to measures of variables (Zikmund 1997). The measures of association on the other hand refer to values designed to represent co-variation between variables. This quantitative data analysis will employ the Pearson's correlation coefficient. The Pearson's coefficient is used to measure the association among variables. The Pearson's correlation considers the joint variation in two measures (Ghauri and Gronhaug 2005). It helps to establish the strength of the linear relationship between two variables. The correlation coefficient takes on the values from -1 to $+1$. A correlation coefficient close to either -1 or $+1$ indicates a strong negative or positive relationship respectively between variables, whilst a correlation coefficient of zero indicates that the variables are unrelated. Correlation matrix is also used as a tool in determining whether multicollinearity is present in the regression equation.

3.5.3 Multivariate Analysis

Multivariate analysis is a statistical method that is used to simultaneously investigate two or more variables (Zikmund 2003). In this research, Panel data estimations are used to establish and test the simultaneous relationship between the various variables. Multivariate analysis is employed because of the inherently multidimensional nature of the dependant variable. Working capital management on firms profitability is simultaneously affected by many factors and therefore by independently measuring the influence of each explanatory variable,

3.5.3.1 Panel Data Analysis

Panel or longitudinal data analysis is a form of multivariate analysis that allows for the pooling of observations on a cross section over several time periods. Cross section observation can be households, countries, firms or individuals. Unlike Ordinary Least Square (OLS) regression, panel data regression has two dimensions, one for cross-section units and the other for time series. Due to the two dimensional nature of panel

data, the data sets provide rich sources of information for accurate analysis. Panel data regression has several advantages over one-dimensional regression.

Firstly, panel data allows for the control of individual heterogeneity (Hsiao 2003). This can be possible by the use of either one-way or two-way analysis to control for the individual and time invariant variables, but a time-series study or a cross-section study alone cannot. This means that using only time-series or cross-section studies, which does not control for heterogeneity will run the risk of obtaining biased results. Secondly, panel data gives more informative data, more variability, more degree of freedom and more efficiency (Baltagi 2005). Whilst time-series studies always suffer from multicollinearity, this is less likely in a panel data. In panel data, the variation in the data can be decomposed into variation between and within variables. The former variation is usually bigger. Because of the additional and more informative data, panel data can produce a more reliable parameter estimates. Also, by combining time-series of cross-section observations, panel data can significantly increase the number of observations. This is particularly important for the study of like what are the determinants of working capital management on firm's profitability in Ethiopian Somali regional state, which are characterized by cross-section observations and time-series. Thirdly, panel data can be used to obtain consistent estimators in the presence of omitted variables (Wooldridge 2002). OLS will provide biased estimators if omitted or unobservable variables are correlated with the dependent variables. This is a problem when investigating only a cross-section data; however, panel data provides a solution to this problem. There is however some limitations or disadvantages associated with panel data including the following. First, design, data collection and data management can pose a problem because of the cross-sectional and time-series dimension of data involved. Second, the choice of appropriate model depending on the degree of homogeneity of the intercept and slope coefficients and the extent to which any individual cross-section effects are correlated with the explanatory variables can be a problem (Song and Witt 2000).

A classical panel data linear regression model is given as follows:

$$y_{it} = \alpha + x'_{it}\beta + \varepsilon_{it} \text{ with } i = 1, \dots, N \text{ and } t = 1, \dots, T$$

With i denoting the cross-section dimension, e.g. regions, countries, and t denoting time series dimension, such as years, quarters. α is a scalar, α is $K \times i$ vector and X_{it} is the i^{th} observation on K explanatory variables. ε_{it} is the disturbance term. A panel equation can be estimated using either one-way ($\varepsilon_{it} = \mu_i + \varepsilon_{it}$) or two-way error ($\varepsilon_{it} = \mu_i + \lambda_t + \varepsilon_{it}$) component model. Where μ_i denotes the unobservable individual-specific effect, λ_t denotes the unobservable time effect and ε_{it} denotes the remainder disturbance.

In this research, the balanced panel data is favored over the unbalanced panel data. This is because balanced panel data allows for the equal observation for every unit of observation for every time period. In principle, there are three ways of estimating a static panel data model. The choice of these three methods depends on whether the individual cross-section effects are considered to be constant, fixed or random. However, it must be said that the choice of model is not arbitrary as statistical test must be applied in order to choose the one, which is more consistent and efficient in analyzing a given data. For this reason, all three models will be estimated and then the necessary tests applied before choosing the appropriate model. These three models are discussed in turns.

3.5.3.1.1 Pooled OLS Regression

If it is assumed that the term (μ_i or $\mu_i + \lambda_t$) above is constant, then there is neither significant individual nor significant time effects. In this regard Pooled OLS regression will be the model to use. This is because Pooled OLS will provide consistent and efficient estimates of the homogenous intercept and slope. The good thing about Pooled OLS model is that it is easy to estimate and interpret because one can pool all of the data and run an OLS regression model. However, the idea that the unit-specific effects do not differ in Pooled OLS makes it very restrictive and usually unrealistic. As argued by Baum (2006), pooled OLS regression can have a complicated error process such as heteroskedasticity across panel units, serial correlation within panel units etc..

3.5.3.1.2 Fixed Effects model

The Fixed Effects (FE) model assumes that the slope coefficients are constant for all firms, but the intercept varies across firms. As argued by Greene (2003), the formulation of the FE model assumes that differences across unit can be captured in differences in the constant term. In FE model each (μ_i or $\mu_i + \lambda_i$) is treated as an unknown parameter to be estimated. According to Baltagi (2005), the FE model is an appropriate specification if the focus is on a specific set of (N) firms or regions. One advantage of FE is that there is no need to assume that the effects are independent of (ε_{it}) because it allows the unobserved individual effects to be correlated with the included variables. The disadvantages of FE are that FE estimator cannot estimate the effect of any time invariant variable like location. Therefore, any time invariant variable is wiped out by the deviations from means transformation. In addition, the FE model suffers from a large loss of degree of freedom because of estimating (N-1) extra parameters. Also, too many dummies may increase the problem of multicollinearity among the regressors. Therefore the decision is taken in this thesis to consider fixed effect models.

3.5.3.1.3 Random Effects model

The Random Effects (RE) estimator is more efficient than the FE estimator if it can be assumed that firm effects are randomly distributed across firms. Under the RE assumptions, (μ_i or $\mu_i + \lambda_i$) is uncorrelated with X_{it} . Therefore, the generalized least squares (GLS) estimator of Balestra and Nerlove (1966) can be used. RE model is an appropriate specification if (N) cross-sectional units are randomly drawn from a large population. The one advantage as argued by Owusu-Gyapong (1986) and Greene (1997) is that GLS estimator is a weighted average of the within-group and between-group estimators, which enables the researcher to extract information from those two variations. However, the disadvantage of RE model is that the researcher has to make specific assumptions about the pattern of correlation between the effects and the included explanatory variables (Hsiao 2003).

3.5.4 Model Specifications

As mentioned above, the effect of working capital management on firms' profitability has been estimated by using quantitative models. The general model formulated was as follows

Therefore, the general formula used for the model is:

$$GOP_{it} = \beta_0 + \sum_{i=1}^n \beta_i X_{it} + \epsilon$$

Source: Raheman and Nasr, (2007).

Where:

GOP_{it} = Gross operating profit of a firm i at time t ; $i = 1, 2, 3, \dots, 25$ firms.

β_0 = the intercept of equation

β_i Coefficient of X_{it} variables

X_{it} = the different independent variables for working capital management of Firm i at time t . $t =$ Time from 1, 2, ..., 6 years and ϵ = Error term

Finally, specifically, when the above general model is converted into the specified Variables of this study the following regression equations were run to estimate the impact of working capital management on the firm's profitability of selected companies:

$$GOP_{it} = \beta_0 + \beta_1 (ARD_{it}) + \beta_2 (IHD_{it}) + \beta_3 (APP_{it}) + \beta_4 (CCC_{it}) + \beta_5 (CR_{it}) + \beta_6 (DR_{it}) + \beta_7 (SG_{it}) + \beta_8 (Size_{it}) + \epsilon$$

Model used for regressing account receivable as independent variable.

$$GOP_{it} = \beta_0 + \beta_1 (ARD_{it}) + \beta_2 (CR_{it}) + \beta_3 (DR_{it}) + \beta_4 (SG_{it}) + \beta_5 (Size_{it}) + \varepsilon$$

Model used for regressing inventor as an independent variable

$$GOP_{it} = \beta_0 + \beta_1 (IHD_{it}) + \beta_2 (CR_{it}) + \beta_3 (DR_{it}) + \beta_4 (SG_{it}) + \beta_5 (Size_{it}) + \varepsilon$$

Model used for regressing account payable as an independent variable

$$GOP_{it} = \beta_0 + \beta_1 (APD_{it}) + \beta_2 (CR_{it}) + \beta_3 (DR_{it}) + \beta_4 (SG_{it}) + \beta_5 (Size_{it}) + \varepsilon$$

Model used for regressing cash conversion cycle as an independent variable

$$GOP_{it} = \beta_0 + \beta_1 (CCC_{it}) + \beta_2 (CR_{it}) + \beta_3 (DR_{it}) + \beta_4 (SG_{it}) + \beta_5 (Size_{it}) + \varepsilon$$

Where:

GOP= Gross operating profit

ARD= Accounts Receivable days

IHD= Inventories holding days

APD= Accounts Payable period

CCC= Cash conversion cycle

CR= Current ratio

DR= Debt ratio

Size= Natural logarithm of Sales

SG= Sales growth

ε = Error term

3.6 Conclusions and the relationship between research hypotheses and the data

This chapter discussed the research objective and hypotheses development, research methods and different data sources which were appropriately used to address the study problems. Table 3.1 set out how each research hypotheses are addressed by the

appropriate items in the survey structure documentary reviews of companies' financial statements.

In general basing the research problems and objective the study developed five hypotheses. Similarly, based on the underlying principles of research methods and the research problem quantitative approach were chosen as appropriate to this research. To this end, surveys of structured documentary reviews (companies' financial statement) were shown to be the appropriate method of inquiry to answer the research problems for this study. The next chapter presents the results of each of these methods of inquiry.

Mine while, the study tried to specify the variables and models used under the study In order to analyze the effects of management of working capital management on firms' profitability the researcher identifies key variables that indicate profitability, working capital component, liquidity and other factors that influence profitability. The chosen variables include dependent, independent and some control variables. And this total of nine (9) variables including one dependent, four independent and four control variables the next chapter presents the results of each of these methods of inquiry.

Table 3.1 Relation between the research hypotheses and the data

Table 3.1 shows relationship between the research hypotheses and the data

Research hypotheses	Items in the survey of documentary reviews
HP1: There is positive relationship between efficient working capital management and firms' profitability.	Reviews of firms' income statement and balance sheet. Specifically, sales, COGS and A/R, A/P, financial asset, inventory and cash.
HP2: There is a negative relationship between number of account receivable days and firms profitability.	Reviews of firms' income statement and balance sheet, specifically, sales, COGS, A/R, inventory, cash and financial asset.
HP3: There is a negative relationship between no inventory holding days and firms profitability	Reviews of firms' income balance sheet and statement, like cash, A/R, A/P, inventory, financial asset, sales and COGS.
HP4: There is a negative relationship between number of account payable days and firms profitability.	Reviews of firms' income statements and balance sheet namely, A/P, sales, COGS, financial assets.
HP5: There is a negative relationship between CCC and firms profitability	Reviews of firms' balance sheet and income statement like, total debt, total asset, financial asset, sales, COGS.
HP6: There is a positive relationship between liquidity of the firms and profitability.	Reviews of firms' balance sheet and income statement like, total debt, total asset, financial asset, sales, COGS.
HP7: There is a negative relationship between debt used by the firms and profitability.	Reviews of firms' balance sheet and income statement like, total debt, total asset, financial asset, sales, COGS.

Chapter Four

4. Results and Analysis

4.1 Results and Analysis

The former chapter presented the research methodology and the rationale for undertaking the research using a quantitative approach particularly of documentary review analysis. And the next chapter present section 4.1.1 presents results and analysis for summary descriptive statistics of the study, followed by the test results and analysis for the assumptions of classical linear regression model (CLRM) in section 4.1.2, And Section 4.1.3 presents results and analysis of Pearson's correlation coefficient and Section 4.1.4. Results and Analysis for multiple regressions. Finally The summary of the panel data regression analysis and conclusion. Are represented 4.2, and 4.3. Respectively.

This chapter discussed Panel (or longitudinal) data that is used in this study as it includes both time-series and cross-sectional data, which similar variables are observed from similar cross-sectional sample from various duration of time (Studenmund, 2011). Fixed effects estimation is selected in the analysis in view that one of the benefits is that it prevents the biasness of variables that has been excluded which has fixed period of time or also known as “unobserved heterogeneity or a fixed effect” (Studenmund, 2011).

The data used in this study are obtained from a sample of 25 companies from Ethiopian Somali regional state for the period of 2009 to 2014, which represents the manufacturing sector. The analysis of this study was examined by applying the statistical package of E-Views version 6

Subsequently, the effect of WCM components on the profitability of firms are investigated by testing on the hypotheses developed earlier in Chapter 3. The main purpose of this study is to investigate the impacts of working capital management on firms' profitability. The secondary data sources to this end are the documentary review analysis of companies financial statements particularly income statements and balance sheet. Using companies' income statement and balance sheet.

4.1.1 Result and Analysis for Summery Descriptive Statistics

This part presents the result based on the descriptive statistics of both the dependent and independent variables which are described under the following sections. Table 4.1. Below which presents descriptive statistics for 25 manufacturing firms in Ethiopian Somali regional state for a period of Six years from 2009 to 2014, this has a total of 150 firm-year observations.

Table 4.1 Descriptive statistics of sample companies						
Variables	N	Mean	Medium	Maximum	Minimum	Std. Dev.
Gross operating profit	150	0.1699	0.1700	0.3600	-0.0500	0.0823
Account receivable days	150	93.8333	93.0000	134.0000	62.0000	12.2340
Inventory holding days	150	49.1067	50.0000	74.0000	26.0000	9.2947
Accounts payable days	150	51.9867	52.5000	69.0000	36.0000	8.0468
Cash conversion cycle	150	90.9533	92.0000	139.0000	51.0000	17.0693
Current ratio	150	2.6498	2.6550	5.5600	0.3400	1.0236
Debt ratio	150	0.2361	0.2300	0.4300	0.0600	0.0881
Sales growth	150	11.8797	0.1100	1.3800	-1.4500	0.5366
Size of the company	150	0.1096	11.7850	15.1800	7.5800	1.5369
<i>Source: E-view output from financial statements of sample companies, 2009-2014</i>						

Based on, Table 4. 1. The average profit of the manufacturing firms as indicated by GOP is 16.99% (median17. %). The minimum value for GOP is reported as negative 5% with maximum value of 36%, whereby the standard deviation of GOP is indicated as 8.23%, which means that GOP value can deviate from mean of both sides by 8.23%.

For WCM components, noted that ARD has reported the highest mean value of 94 days, followed by APD with average of 51 days and IHD recorded an average of 49 days, which resulted in average CCC of 90 days that is around 3 months period. These reflect that manufacturing firms receive payment from sales proceeds on average of 94 days with standard deviation of 12 days, which the minimum collection period from receivables proceeds is 62 days with maximum period of 134 days. Furthermore, firms take an average of 49 days to sell inventory with standard deviation of 9 days, which the median for inventory conversion to sales is 50 days. Meanwhile, firms pay their

purchases an average of 51 days with standard deviation of 8 days, which the minimum period reported as 36 days and maximum period is 69 days. Reportedly, CCC as a measure of efficiency in working capital management has an average of 90 days with median of 92 days. The average current ratio of manufacturing firms is reported as 2.6498, while the mean size of the firms is 11.8797. Meanwhile, the average sales growth and debt ratio are reported as 10.96% and 23.61% respectively.

To check the liquidity of the companies, a traditional measure of liquidity (current ratio) is used. The average current ratio for Ethiopian Somali regional state manufacturing firms is 2.6498. With a standard deviation of 1.0236. The highest current ratio for a company in a particular year is 5.5600 and in the same way the minimum ratio for a company in a year is 0.3400. In the same way to check the debt financing and its relationship with the profitability the debt ratio (obtained by dividing the total debt of the company by the total assets) is used as a control variable. The results of descriptive statistics show that the average debt ratio for the sample of Ethiopian Somali regional state manufacturing companies is 23.61percent with a standard deviation of 8.81percent. The maximum debt financing used by a company is 0.4300 percent while the minimum level of the debt ratio is 0.06 percent, the size of the firm and its relationship with profitability, natural logarithm of sales is used as a control variable. From table 4.1 above one can see that the mean value of log of sales is 11.8797 and standard deviation of 1.5369 the maximum value of log of sales for a company in a year is 15.1800 while the minimum value is 7.5800 respectively. To check the sales growth and its impact on profitability, sales growth is measured by $(\text{this year's sales} - \text{previous year's sales}) / \text{previous year's sales}$ is used as control variable. Looking at the above table, we can see that the average value of sales growth is 10.96 percent with standard deviation of 53.66 percent. The maximum and minimum values of sales growth are 1.3800 and -1.4500 respective.

4.1.2 Result and Analysis for Tests for the Classical Linear Regression Model (CLRM) Assumptions

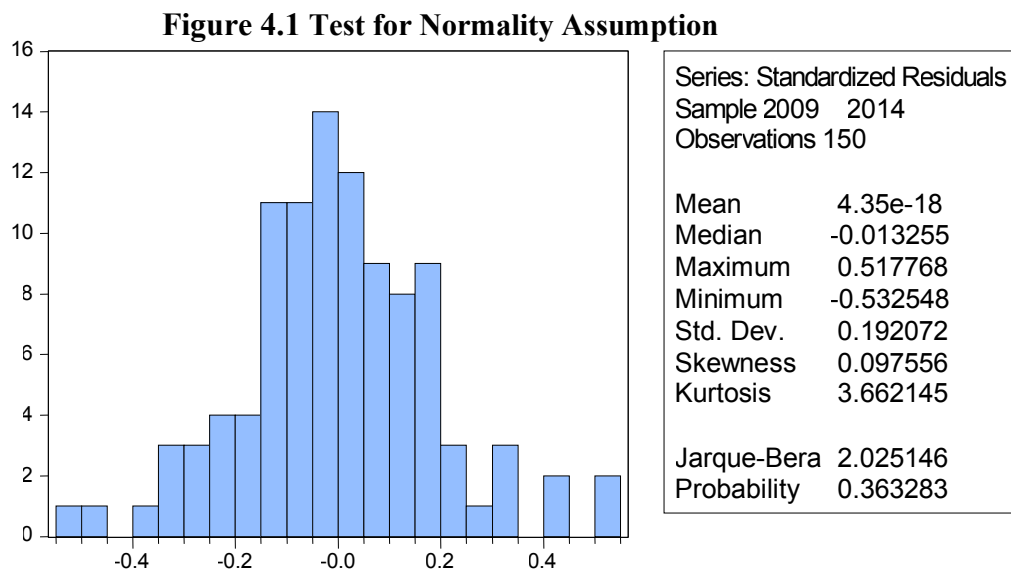
Under this subsection the study presented four different results for the test of CLRM. Firstly normality, and second test results for linearity assumption and thirdly test and results for homoscedasticity (equal variance) and finally, results for Multicollinearity (variance inflation factor (VIF) tests are presented.

4.1.2.1 Normality Assumption

If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant meaning disturbance to be normally distributed around the mean. This means that the p -value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level (Brooks, 2008).

Ho: Normally distributed errors

Ha: Non-Normal Distribution error



Source: E-views output from financial statement of sample companies2009-2014

Therefore, the normality tests for this study as shown in Figure 4.1, The result showed that, majority of distributions are full's in to the bell shaped boundary of histogram with the mean of 4.35e-18 and standard deviation 0.192. The Bera-Jarque statistic has a P-value of 0.363 implies that the p-value for the Jarque-Bera test for models is greater than 0.05 which indicates that the errors are normally distributed. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5% significance level.

4.1.2.2 Linearity Assumption

The result Ramsey test shows that F-statistic of 1.72 and log likelihood of 2.47 while, the probability of F and χ^2 has 16percent and 14.5 percent respectively (table 4.2)

Table 4.2 Ramsey Reset test for linearity			
F- statistic	1.72	Prob. F(1,55)	0.161
Log likelihood ratio	2.47	Prob. Chi-Square (1)	0.145

Source: E-views output from financial statement of sample companies 2009-2014

As table 4.2 discovered that, both F and χ^2 (Chi-Square) versions of the test are presented respectively with 16 and 14.5 percent and it can be seen that there is no apparent nonlinearity in the regression equation as both test result is greater than 5 percent. So it's concluded that the linear model for the study is appropriate.

4.1.2.3 Homoscedasticity Assumption (variance of the errors is constant)

According to Brooks, (2008) it has been assumed thus far that the variance of the errors is constant, σ^2 - this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroskedasticity. To test for the presence of heteroskedasticity, the popular white test was employed. It is hypothesized that as follows

Ho: There is no heteroskedasticity problem (homoscedasticity)

Ha: There is heteroskedasticity

The probability of F-statistics for white's test is 17.7 percent while the probability of χ^2 for R-squared and Scaled explained are 17.4 and 41.7 percent respectively (table 4.3)

F-statistic	1.496	Prob. F(7,57)	0.177
Obs*R-squared	10.087	Prob. Chi-Square(7)	0.174
Scaled explained SS	7.317	Prob. Chi-Square(7)	0.417

Source: E-views output from financial statement of sample companies 2009-2014

According to Brook, (2008) indicated that if the P-values of these test statistics are considerably in excess of 0.05, then the test give conclusion that there is no evidence for the presence of heteroskedasticity. Therefore, based on this statistics we accept null hypothesis that is indicated as there is no Heteroskedasticity for the models.

4.1.2.4 Multicollinearity Test

An implicit assumption that is made when using the OLS estimation method is that the explanatory variables are not correlated with one another (Brooks, 2008). If there is no relationship between the explanatory variables, they would be said to be orthogonal to one another. If the explanatory variables were orthogonal to one another, adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change. According to Brooks, 2008, in any practical context, the correlation between explanatory variables will be non-zero, although this will generally be relatively being in the sense that a small degree of

association between explanatory variables will almost always occur but will not cause too much loss of precision. However, a problem occurs when the explanatory variables are very highly correlated with each other, and this problem is known as Multicollinearity. Furthermore, a high correlation between variables may indicate the presence of Multicollinearity (Saunders et al. 2003; Anderson et al. 2007). Field (2005) suggest that Multicollinearity becomes a problem only when the correlation coefficient exceeds 0.80. So the purpose of checking for Multicollinearity is because it leads to misspecification of test results of the regression.

Further, this assumption has been tested for the variables considered in the study as the independent variables. Therefore, the null hypothesis is articulated as there is no very high correlation between the independent variables. This is summarized with the alternative hypothesis as follows.

Ho: No Multicollinearity

Ha: Multicollinearity

VARIABLES	ARD	IHD	APD	CCC	CR	SIZE	SG	DR
ARD	1							
IHD	.137	1						
AP	.063	.063	1					
CCC	0.25	0.792	0.26	1				
CR	.310	.560	-.360	.350	1			
SIZE	-.145	-.089	-.450	-.120	-.280	1		
SG	-.475	-.035	-.240	-.320	-.150	.520	1	
DR	-.023	-.026	-.760	-.036	-.018	.156	.460	1

Source: E-views output from financial statement of sample companies 2009-2014

In this particular case, the largest observed Correlation for the independent variables of gross operating profit is 0.792 between and IHD and CCC and APD and DR which is 0.760 and thus, this is sufficiently small as compared to the tolerable correlation sated for this particular study which is 0.8. (80percent) coefficient (Gujarati, 2004).

Therefore, based on this statistics we accept null hypothesis that is indicated as there is no multicollinearity for the models.

4.1.3 Results and analysis for Pearson's correlation coefficient

Pearson's Correlation analysis, which is also known as bivariate correlations, has been performed in order to determine and identify if there is any significant strong relationship between the independent and dependent variables such as the WCM components and control variables towards the profitability of firms measured by GOP under manufacturing sectors. The summary of the Pearson's correlation matrix is presented in Table 4.5 below.

Table 4.5 .Pearson's Correlation Matrix of Manufacturing Sector									
VARAB LES	GOP	ARD	IHD	APD	CCC	CR	SIZE	SG	DR
GOP	1								
ARD	-0.3592	1							
IHD	-0.4422	.137	1						
AP	-0.2396	.063	.063	1					
CCC	-0.257	0.25	0.792	0.26	1				
CR	-0.3362	.310	.560	-.360	.350	1			
SIZE	-0.3238	-.145	-.089	-.450	-.120	-.280	1		
SG	0.3776	-.475	-.035	-.240	-.320	-.150	.520	1	
DR	-0.0428	-.023	-.026	-.760	-.036	-.018	.156	.460	1

Source: E-views output from financial statement of sample companies 2009-2014

The Above table shows the correlation coefficient among the profitability measures (GOP), independent variables, and the control variables of the study. As different finance literature indicates and as it is observed in the real world, efficient working capital management is expected to improve companies' profitability. From this one should expect negative correlation between accounts receivable period and the profitability measures i.e. gross operating profit.

Table 4.5. Shows negative correlation coefficient between accounts receivable days and profitability measures, i.e. Gross operating profit. From the table, one can notice that correlation coefficient of accounts receivable period with GOP is -35.92%. It indicates that the shorter account receivable days is associated with high profitability and/or longer accounts receivable period is associated with lower profitability.

In addition, as it can be clearly seen in Table 4.5. There is a negative correlation coefficient between firm size and profitability measure (i.e. gross operating profit) of the study is -32.38%. Moreover, the above correlation table shows that firm growth rate is positively related with gross operating profit with a correlation coefficient of 37.76 percent. Likewise, debt ratio has negative correlations with gross operating profit,

4.1.4 Result and Analysis for the multiple regression

This section analyzes two regression outputs: one for the whole regression including all variables together and separate analysis on the results of each dependent variable regressed by independent variables to see the time impact on the output. The regression is estimated and run using gross operating profit as an independent variable. Further, all independent variables are run using account receivable days, inventory holding days, account payable days and cash conversion cycle including other control variables.

4.1.4.1 Multiple regressions for pooled OLS

Pooled multiple regression for all independent and control variables simultaneously indicated that all variables had negative coefficients. Except for sales growth (0.0240) the value of adjusted R² is 78.1 percent while Durbin-Watson and F-statistic are 2.59 and 23.45 respectively (table 4.6).

Table 4.6.Result of multiple regressions for pooled OLS				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ARD	-0.0150600	0.001271	1.932060	0.0157*
IHD	-0.0323000	0.001271	1.932060	0.0001**
APD	-0.1130000	0.016074	0.323409	0.0011**
CCC	-0.0248600	0.322856	-0.479986	0.0301*
CR	-0.0405198	0.016074	0.323409	0.0019**
DR	-0.0254966	0.322856	-0.479986	0.0101*
SG	0.0240626	3.190480	2.081388	0.0294*
Size	-0.0060007	3.10E-07	2.415073	0.0161*
C	-6.063556	0.685608	-3.009819	0.0032**
R-squared	0.811025	Mean dependent var		0.226333
Adjusted R-squared	0.781773	S.D. dependent var		0.187457
S.E. of regression	0.169566	Akaike info criterion		-0.534293
Sum squared resid	3.450314	Schwarz criterion		0.067834
Log likelihood	70.07197	Hannan-Quinn criter.		-0.289668
F-statistic	23.451417	Durbin-Watson stat		2.593042
Prob(F-statistic)	0.0000			
GOP = -6.06-0.015ARD -0.032IHD-0.113APD-0.0248CCC -0.040CR -0.025DR + 0.024SG + 0.006 SIZE				
Note: * p < .05, ** p < .01				
Source: <i>E-views output from financial statement of sample companies2009-2014</i>				

This is consistent with the view of Weston and Brigham (1977, P. 690) minimizing components of working capital will increase profitability as a measure of efficiency CCC. On the same table 4.6 the regression shows that firms with high level of liquidity (measured by current ratio) are expected to post low level of profitability and vice versa with a very higher level of significance. The regression coefficient -0.0405198 and p-value 0.0019 shows highly significant at $\alpha = 1$ percent indicating firm profitability has a negative relationship with liquidity. According Arnold (2008) mentioned that liquidity and firms' profitability has a negative relationship, however he stressed that chooses any of these two extremes are difficult for the managers. While the regression output for debt ratio as a measure of firms leverage shows that, whenever firm's debt increases profitability will decrease. Even if the regression coefficient is -0.0254966, the p-value 0.0101, However, Deloof (2003) mentioned that when leverage of the firm increases;

it will adversely affect its profitability while financial debt ratio used as a proxy for leverage.

Similarly, the regression shows that the larger firms (measured through the natural logarithm of sales) whenever firm's size increases profitability will decrease Even if the regression coefficient is -0.0060007, the p-value 0.0161, at the same time, on table 4.6 sales growths is statistically significant where gross operating profit increases as sales increase. The result shows sales growths has a positive coefficient of 0.0240626 and significant at $\alpha = 1$ percent with a p-value of 0.0294,

4.1.4.2 The Effect of Accounts Receivables Days (ARD) on Profitability (GOP)

Regarding separate regression for each independent variable to investigation the impacts on firms' profitability, accounts receivable days showed negative based on table 4.7.0

Table 4.7 Result Of Multiple Regressions For Model 1				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ARD	-0.0004506	0.001271	1.932060	0.0357*
CR	-0.0305198	0.016074	0.323409	0.0069**
DR	-0.0154966	0.322856	-0.479986	0.0221*
SG	0.0640626	3.190480	2.081388	0.0395*
Size	-0.0090007	3.10E-07	2.415073	0.0072*
C	-2.063556	0.685608	-3.009819	0.0032**
R-squared	0.691025	Mean dependent var		0.226333
Adjusted R-squared	0.581773	S.D. dependent var		0.187457
S.E. of regression	0.169566	Akaike info criterion		-0.534293
Sum squared residual	3.450314	Schwarz criterion		0.067834
Log likelihood	70.07197	Hannan-Quinn criter.		-0.289668
F-statistic	2.141417	Durbin-Watson stat		2.593042
Prob(F-statistic)	0.002240			
GOP = -2.063556 -0.000456ARD -0.0305198CR -0.0154966DR 0.0640626 SG -0.009 SIZE				
Note: * p < .05, ** p < .01				
Source: E-views output from financial statement of sample companies 2009-2014				

Based on Model 1 in Table 4.7. There is a significant negative relationship between ARD and GOP at significance level of 0.05. This result revealed that an increase in the number of days accounts receivable (ARD) by a day has reduced the GOP of the firms by -0.045%. The above analysis is similarly with Fabozzi and Peterson (2003) those who mentioned that increase in amounts of account receivable has opportunity costs and bad debt, while increasing sales for a company. Therefore, whenever collection periods increases bad debt increase and hence profitability will full down and vice versa. Similarly, the finding is consistence with previous research who found negative relationship between accounts receivables and corporate profitability (Deloof, 2003; Lazaridis and Tryfonidis, 2006; Raheman and Nasr, 2007; Falope and Ajilore, 2009 and Amarjit et. al. 2010).Based on the hypotheses developed to examine on the effect of ARD on GOP:-

H1: There is significant negative relationship between Number of days Accounts Receivable (ARD) and Gross Operating Profit (GOP) of the firms. Thus, based on the result obtained in Model 1 above, the null hypothesis of H1 is accepted. Therefore, there is a significant negative relationship between ARD and GOP of firms under study, which is consistent with the results obtained by previous researchers.

At the same time current ration which is a traditional measure of liquidity and debt ratios is used as a proxy for leverage had a p-value of 0.0069 and 0.0221 with negative coefficient -0.0305198 and -0.0154966 respectively. Similarly log of sales used as proxy for size of a company shows a significant negative relationship with profitability firms' with a p-value of 0.0072 with negative coefficient -0.0090007 and sale growth ration had positive a p- value 0.03956 with positive coefficient 0.0640626 There is also 58.1 percent adjusted R square, 2.59 Durbin-Watson and 2.14 F-statistic.

4.1.4.3 The Effect of Inventory Holding Days (IHD) on Profitability (GOP) of firms

Regarding separate regression for each independent variable to investigation the impacts on firms' profitability, inventory holding days showed negative based on Table 4.8

Table 4.8 Result of Multiple Regressions for Model 2				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IHD	-0.001506	0.001271	1.932060	0.0001**
CR	-0.0305198	0.016074	0.323409	0.0011**
DR	-0.0154966	0.322856	-0.479986	0.0301*
SG	0.0440626	3.190480	2.081388	0.0385*
Size	-0.0074307	3.10E-07	2.415073	0.0047**
C	-3.0473556	0.685608	-3.009819	0.0002**
R-squared	0.622377	Mean dependent var		0.226333
Adjusted R-squared	0.548618	S.D. dependent var		0.187457
S.E. of regression	0.171949	Akaike info criterion		-0.506387
Sum squared resid	3.547955	Schwarz criterion		0.095740
Log likelihood	67.97901	Hannan-Quinn criter.		-0.261762
F-statistic	1.968608	Durbin-Watson stat		2.520667
Prob(F-statistic)	0.005915			
GOP = -3.0473556-0.001506IHD-0.0305198CR-0.0154966DR+ 0.0440626SG - 0.0074307SIZE				
Note: * p < .05, ** p < .01				
<i>Source: E-views output from financial statement of sample companies 2009-2014</i>				

Based on Model 2 in Table 4.8 that analyze on the effect of IHD towards the firms' GOP, it is revealed that IHD has a negative relationship with GOP, and the relationship is significant. This indicates that an increase of the number of days holding inventories (IHD) by a day has decrease the GOP of the firms by 0.015%. It can interpreted that if the inventory takes more time to sell, it will adversely affect profitability. The result obtained is found to be consistent with previous literature review, such as Deloof (2003) Charitou, Elfani and Lois (2010) Falope and Ajilore (2009) Tewodros Abera

(2010). Muluaem Mekonnen (2011) Based on the hypotheses developed to examine on the effect of IHD on GOP:-

H2: There is significant negative relationship between Number of days inventory (IHD) and Gross Operating Profit (GOP) of the firms.

Thus, based on the result obtained in Model 2 above, the null hypothesis of H2 is accepted. Therefore, there is a significant negative relationship between IHD and GOP of firms under study, which is consistent with the results obtained by previous researchers,

As the same time there is -0.030 and -0.015 coefficients for current and debt ratio respectively with a p-value of 0.0011 and 0.0301, firms' size ratios had a p-value of 0.0047 with negative coefficient -0.0074307 and sale growth ratio had positive a p-value 0.0385 with positive coefficient 0.0440626. On the same table there are 54.8 percent adjusted R-squared, 2.52 Durbin-Watson and 0.005915 F-statistics.

4.1.4.4 The Effect of Accounts Payable Days (APD) on Profitability (GOP) of firms

Regarding separate regression for each independent variable to investigate the impacts on firms' profitability, accounts payable days showed negative based on Table 4.9.

Table 4.9 Result Of Multiple Regressions For Model 3				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
APD	-0.012642	0.016558	0.763484	0.0011**
CR	-0.278394	0.316847	-0.878639	0.0035**
DR	-0.003405	0.001980	-1.719386	0.0401*
SG	0.001258	3.09E-07	2.068456	0.0285*
Size	-0.005780	3.209480	1.968949	0.0037**
C	-1.444501	0.680251	-2.123482	0.0000**
R-squared	0.702377	Mean dependent var		0.226333
Adjusted R-squared	0.618618	S.D. dependent var		0.187457
S.E. of regression	0.171949	Akaike info criterion		-0.506387
Sum squared resid	3.547955	Schwarz criterion		0.095740
Log likelihood	67.97901	Hannan-Quinn criter.		-0.261762
F-statistic	1.968608	Durbin-Watson stat		4.520667
Prob(F-statistic)	0.001215			
GOP = -1.444501--0.012642APD-0.278394CR-0.003405DR+ 0.001258SG -0.005780SIZE				
Note: * p < .05, ** p < .01				
Source: <i>E-views output from financial statement of sample companies2009-2014</i>				

The regression result for average payment period on table 4.9 showed that there is -0.012642, coefficient with a p-value of 0.0011. That Indicates that the less profitable firms wait longer to pay their bills similarly, current and debt ratio had -0.278 and -0.030 coefficients with a p-value of 0.0035 and 0.0401 respectively.

The remaining control variables firms' size ratios had a p-value of 0.0037 with negative coefficient -0.005780 and sale growth ration had positive a p- value 0.0285 with positive coefficient 0.001258,

Based on the hypotheses developed to examine on the effect of APD on GOP:-

H3: There is significant negative relationship between Number of days Accounts Payables (APD) and Gross Operating Profit (GOP) of the firms.

Thus, based on the result obtained in Model 3 above, the null hypothesis of H3 is accepted. Therefore, there is a significant negative relationship between AP and GOP of firms under study, which is consistent with the results obtained by previous researchers. Such as Deloof (2003) Charitou, Elfani and Lois (2010) Falope and Ajilore (2009) Muluaem Mekonnen (2011)

4.1.4.5 .The Effect of cash conversation cycle on Profitability (GOP) of firms.

Cash conversion cycle is used as a popular to measure efficiency of working capital management. Therefore, model 4 took the cash conversion cycle as an independent variable, and the result based on table 4.10.

Table 4.10 Result Of Multiple Regressions For Model 4				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CCC	-0.002240	0.000901	2.485424	0.0041**
CR	-0.011340	0.016048	0.706592	0.0025**
DR	-0.130123	0.318856	-0.408092	0.0201*
SG	7.11E-07	3.05E-07	2.332681	0.0185*
Size	-6.335836	3.163201	2.002982	0.0022**
C	-1.958478	0.661805	-2.959298	0.0000**
R-squared	0.553792	Mean dependent var		0.226333
Adjusted R-squared	0.457625	S.D. dependent var		0.187457
S.E. of regression	0.167915	Akaike info criterion		-0.553856
Sum squared resid	3.383470	Schwarz criterion		0.048271
Log likelihood	71.53922	Hannan-Quinn criter.		-0.309231
F-statistic	2.265472	Durbin-Watson stat		2.625488
Prob(F-statistic)	0.001100			
GOP = -1.958478-0.002240CCC-0.011340CR-0.130123DR+ 7.1107SG - 6.335836SIZE				
Note: * p < .05, ** p < .01				
Source: <i>E-views output from financial statement of sample companies2009-2014</i>				

Based on Model 4 in Table 4.10, CCC reported a negative relationship with GOP, which indicates that there is a decrease in GOP by 0.22% by lengthening the cash conversion cycle (CCC). and the relationship is found to be significant, which the findings obtained is consistent with the results derived by Deloof (2003) and Akinlo (2012), who had found an significant negative relationship between CCC and profitability under fixed effects estimation model, in view that profitability decreases as a result of an increase in the number of days accounts receivable, inventories as well as number of days accounts payable (APD) that have negative relationship with profitability; and APD had been deducted in computation of CCC. Based on the hypotheses developed to examine on the effect of CCC on GOP:-

H4o: There is significant negative relationship between Cash Conversion Cycle (CCC) and Gross Operating Profit (GOP) of the firms. Thus, based on the result obtained in Model 4 above, the null hypothesis of H4 is accepted. Therefore, there is a significant negative relationship between CCC and GOP of firms under study, which is consistent with the results obtained by previous researchers. By analyzing the results the researcher concluded that, if the firm is able to reduce these time periods, then the firm is efficient in managing working capital. This efficiency will lead to increase its profitability.

To summarize the above discussion demonstrates that paying suppliers longer and collecting payments from customers earlier, and keeping products in stock less time, are all associated with an increase in the firm's profitability. Current ratio is a traditional measure of checking liquidity of the firm. On the same table 4.6 current ratio has a significant negative relationship with profitability measured by gross operating profitability with the coefficient of -0.0405198 and p-value of (0.000) and the result is significant at $\alpha = 1$ percent. It indicates that the two objectives of liquidity and profitability have inverse relationships. So, Ethiopian Somali regional state manufacturing firms need to maintain a balance or trade-off between these two measures.

Meanwhile, debt ratio (DR) used as a proxy for leverage of a company, the Pearson correlation analysis shows that negative relationship with gross profit and the coefficient is -0.0254966 However, the P- value (0.0000) table 4.6. And the result is significant at $\alpha = 1$ percent. Further with reference to the control variables, sales growth of the company are significant. Corporate profitability is positively associated with sales growth of a company. The coefficient is 0.0240626 with p-value of (0.000) table 4.6 and the result is highly significant at $\alpha = 1$ percent. This shows that as sales growth over time will increase company's profitability of a firm.

Mine while there is negative significant relation between gross operating profit and logarithm sales (the measures of size). Hence, the result does not change if the logarithm of sales is used to measure the size. As it can be seen in the correlation table

4.6, the coefficient is positive 0.0060007 with p value of (0.000) and the result is highly significant at $\alpha = 1$ percent.

In general, these negative relationships between account receivable period, inventory holding period, account payable period, cash conversion cycle, with the profitability of companies are consistent with the literature review and have significant effect on the profitability of company. The results of correlation analysis indicated that, as far as Ethiopian Somali regional state manufacturing firms are concerned, component working capital management is very strongly and significantly affects their profitability. Therefore, the researcher accepted its all hypotheses

4.2 Summary of Panel Data Regression Analysis of Manufacturing Sector

The summary of the panel data regression analysis is presented as per Table 4.10 for manufacturing sector.

Table 4.10: Summary of Panel Data Regression Analysis of Manufacturing Sector

Variables	Null Hypothesis	Expected Sign	Result Sign	Final Result (t-statistic)	Conclusion
ARD	No Significant relationship	-	-	Significant relationship	Alternative hypothesis of H1 _a is supported
IHD	No Significant relationship	+/-	-	Significant relationship	Alternative hypothesis of H2 ₀ is supported
APD	No significant relationship	+/-	-	Significant relationship	Alternative hypothesis of H3 ₀ is supported
CCC	No Significant relationship	+/-	-	significant relationship	Alternative hypothesis of H4 ₀ is supported
CR	No Significant relationship	-	-	Significant negative relationship in all the models at 0.01 level of significance	
DEBT	No significant relationship	-	-	Significant negative relationship in in all the models at 0.05 level of significance	
SIZE	No significant relationship	+/-	-	Significant positive relationship in all the models at 0.01 level of significance	
GROWTH	No significant relationship	+/-	+	Significance Positive relationship in in all the models at 0.05 level of significance.	

4.3 Conclusion

In order to address the research objective and hypotheses, as detailed in chapter 1 and 3, it is crucial to examine the results of the different methods concurrently. This chapter presented the statistical and regression results which are computed using different methods adopted to investigate the impacts of working capital management on firms' profitability. Specifically, the results of the quantitative methods of inquiry, namely documentary reviews of sample companies' income statement and balance Sheet are presented using. Accordingly, the chapter started by presenting the results for test of CLRM assumptions followed by descriptive statistics. Lastly the chapter presented the result of Pearson's correlation coefficient and multiple regressions.

Chapter Five

5. Conclusion and Recommendations

5.2 Conclusion

The working capital assets and the related short-term liabilities affect the firms' profitability, liquidity (risk) as well as market values of shares (Smith, 1980). Research studies on the effects of management of working capital on firms' profitability in developing countries like in Ethiopia in general and particular Somali regional state.

Thus, this study examined the effect of working capital management on firms' profitability by using audited financial statements of a sample of 25 manufacturing companies in Ethiopian Somali regional state. For the period of 2009 to 2014

The study used Gross operating profit as dependent profitability variables. Where Accounts receivable period, inventory holding period, accounts payable period and cash conversion cycle are used as independent while current ration ,debt ratio, firm size and sale growth are used as control variable.

In light of this objective the study adopted quantitative method of research approaches to test a series research hypothesis. Specifically, the study used structure documentary reviews of companies' audited financial statements. Consequently, the study selected a sample of twenty five (25) companies for the period of six years (2009-2014) with the total of 150 observations. Data was then analyzed on quantitative basis using Pearson's correlation.

Descriptive statistics were used to examine the trend of the chosen variables among the sampled firms. Both correlation analysis and pooled panel data regression models of cross-sectional and time series data were used to analyze the relationships among component of working capital management variables and profitability variables.

The descriptive statistics shows gross operating profit fluctuates with its minimum and maximum value of -0.0500 and 0.3600 respectively. At the same time on average gross operating profit has a value of 0.1699 with standard deviation of 0.0823

On the other hand, by taking cash conversion cycle as a comprehensive measure of working capital efficiency the finding shows that, on average cash conversion cycle takes 92 days and with a minimum and maximum days of 51 and 139 respectively.

From this study the researcher find. That working capital managed will have a significant impact on profitability of those firms. The study have found a significant negative relationship between corporate profitability which is measured by gross operating profitability and the account receivable period, inventory holding period, account payable period and cash conversion cycle for a sample of manufacturing firms in Ethiopian Somali regional state.

Although this study get that there negative relationship between accounts receivables and firms' profitability suggests that less profitable firms will pursue a decrease of their accounts receivables in an attempt to reduce the interval of time between sales and collection of payment from clients, further suggest that managers can create value for their shareholders by reducing the number of day's accounts receivable and inventories This reduction in inventory leads to a reduction in the various costs associated with keeping inventory and therefore improves profitability.

Likewise, the negative relationship between number of days in inventory and firms profitability, having a high level of inventory may also result in a reduction in company profitability. This is because the high level of inventory represents amount of money locked up. Capital locked up in inventory may cause a sub-optimisation of financial resources because such an amount could have been invested in a profitable project in order to improve profitability. Also, the lock up of capital in inventory may require the company to sort after short-term financing, which may increase the financing cost to the company and thereby reduce profitability. High inventory may also minimise profitability in the sense that it will increase the associated costs of holding inventory. Such holding costs include: security cost, rent, heating, obsolesce, theft etc. According to Koumanakos (2008), excessive inventory frequently compensates for sloppy and inefficient management, poor forecasting and inadequate attention to process and procedures. Likewise, the negative relationship between number of days in holding inventory and corporate profitability suggests that in the case of a sudden drop in sales accompanied with a mismanagement of inventory will lead to tying up excess capital at the expense of profitable operations.

The negative relationship between accounts payable and profitability there are many reasons for expecting a significant relationship between accounts payable period and company profitability. A higher value of the specifies that the company wait longer before settling suppliers and a lower value of the accounts payable period denotes the short time frame that it takes a company to pay its debts to suppliers. For a negative relationship, it has been argued that the loss of discount for early payment may affect company profitability (Ng et al. 1999). Asking time to pay means that a company must forgo the cash discount usually offered by suppliers for early payment. And, as maintained by (Ng et al. 1999) the amount of cash discount can be substantial. Also, the decision to accept or request for credit period results in an inherent cost to a company, which diminishes profitability. A research by Ng et al (1999) indicated that the combination of the 2 per cent discount for payment within 10 days of supplies and a net period ending on 30 defines an implicit interest rate of 43.9 per cent. Therefore, the high inherent cost involved in credit period will cause a reduction in profitability,

Moreover, cash conversion cycle that is used as measuring efficiency of working capital management shows that, as cash conversion cycle is longer, profitability is smaller. Hence, the researcher claims and recommends that company managers can build firms value by reducing the cash conversion cycle to a reasonable range or managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables, inventory) to an optimum level.

In general, the study adds to existing literature such as Shin and Soenan (1998), Deloof (2003), Eljelly (2004), Lazaridis and Tryfonidis (2006), Raheman and Nasr (2007), Falope and Ajilore (2009) and Mathuva (2009) who found a strong negative relationship between the measures of working capital management including the average collection period, inventory holding period, average payment period and cash conversion cycle with firms profitability. Further this study find negative relationship between firms size and gross operate profit and also mention positive relationship between sale growth and gross operate profit,

5.3 Recommendations

Based on the study findings the researcher recommends the following points:

The negative relationship between firms' gross operating profit and account receivable period decreases firms' profitability, if there is low collection of account receivables. Therefore, companies have to maintain or adopt neither liberal credit nor conservative policy so as to minimize bad debt and not to lose customers and hence, increase firms' profitability.

The study found negative relationship between inventory holding period and firm's profitability. Here, higher inventory holding period will have higher costs like storage, carrying, spoilages, insurance, and it hold opportunity cost too. As a result, companies' managers have to look over the proper ways of inventory control techniques like economic order quantity (EOQ) or others depend up on the nature of materials they hold. Further, the researcher recommended that companies marketing, purchasing and manufacturing departments should have create strong linkage and communications so as to feed each other in firms' operations and minimize costs.

Similar to the above findings account payable period has negatively related to firms' profitability. Is consistent with the view that speeding up payments to suppliers might increase profitability of firms due to substantial discounts for quick payment. In a condition where there is a higher discount for early payments managers can maximize profitability by reducing the accounts payable period. However, the amount of the discount should be large enough to cover the opportunity cost of early payment and to

make some profit. However, the researcher recommended that firms' have to pay all its debt or bills on time for not losing their vendors in the long run.

Likewise, CCC has a negative relationship with firms' profitability. Therefore, regarding the CCC, the researcher recommended that lowering working capital cycle as a measure of efficient working capital management is the one to be appraised. However, the policy followed for each component has to be neither tight or nor liberal like for average collection period which will loss customers and increase bad debt respectively. Similarly, as recommended above companies' has to manage their inventories (raw materials, working process and finished goods) and account payables in day efficiently to a minimum level, so as to minimize the overall working capital cycle of a firms' and increase profitability.

Finally, both measures of liquidity- current ratio and debt ratio, show significant negative relationship between profitability and liquidity of Ethiopian Somali regional state manufacturing companies. This result is consistent with the view that there is a trade-off between liquidity and profitability. Thus, Ethiopian Somali regional state manufacturing firms can increase profitability by reducing their liquidity position at least to the commonly known level (2 for current ratio and 1 for quick ratio). Managers, therefore, can increase firms' profitability by improving the efficiency of management of working capital investment and financing policies while, also keeping in view of the trade-off between liquidity and profitability.

In general the above discussions demonstrates that paying suppliers longer (not absolutely) and collecting payments from customers earlier, and keeping products in stock less time, are all associated with an increase in the firm's profitability.

5.4 Further Research Directions

This study has highlighted a number of issues that warrant further research in order to examine the effects of working capital management on firms' profitability. The two key directions for this research are: increasing the scope of this study to include other factors, using large sample size.

Taking the previous studies and the current work as a stepping stone, studies should be strengthened on the effects of working capital management on firms' profitability to other economic sectors (particularly in merchandising sector) in Ethiopian Somali regional state, Also as reliable findings results from observations that are large enough to represent the study population and to study the issue at hand by using the appropriate methodology, studies based on the use of long time series data and increased number of observations (sample companies) are needed to gain more insights into the issue at hand. Moreover, it is also important to examine the difference in working capital management followed by different industries and determinants of working capital management for each industry.

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's.

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Appendix. 1

Appendix 1 Stratification of sample companies

A. Manufacturing of mineral water, beverages & soft drink factories (first strata)

1. Guirreh Purified natural Water Bottling paid-up capital 1,492,931.64.00 Shinile ketem Tel 0915146399 “industry”
2. Surer Water Purification paid-up capital 3,993,404.29. Jigjiga ketema Tel 0912081090 “industry”
3. Rahmad Spring Water Plant Project paid-up capital 2,280,179.76. Jigjiga ketema Tel--- “industry”
4. Karamara Mineral Water factory paid-up capital 2,388,889.76 jigjiga ketema Tel 0915741027 “industry”
5. Mohamed Plastic Bottle Water Production paid-up capital 2,388,889.76 jigjiga ketema Tel 0915739839 “industry”
6. Aqua ZamZam Mineral Water & Carbonate Soft Drinks Batting paid-up capital 6,695,807.75 jigjiga ketema Tel 0911217362 “industry”

b. Manufacturing of food products and agro industry factories (second strata)

7. Zahid Livestock trading paid-up capital 7,452,619.76 jigjiga ketema Tel 0915211508 “industry”
8. Janno Agro-Industry paid-up capital 6,742,501.82 ferfer ketema Tel 0915748404 “industry”
9. Flour mill Project aid-up capital 7,622,576.90 filtu ketema Tel ----- “industry”
10. DX Bakery & flour factory paid-up capital 14,820,422.69 jigjiga ketema Tel 0915741894 “industry”

11. Godey wheat farming paid-up capital 16,763,000.64 Godey ketema Tel 0257752438 “industry
12. Diamond Pasta paid-up capital 15,913,139.99 jigjiga ketema Tel -----“industry
13. Tewfik Flour Industry paid-up capital 5,841,103.88 Moyale ketema Tel 0911330968 “industry
14. Doolo Modern Bakery project paid-up capital 5,549,855.87 jigjiga ketema Tel 0925917941 “industry
15. Abdihabashi Modern Food Process Bakery paid-up capital 17,184,524.13 jigjiga ketema Tel 0936690976 “industry
16. Abay Industrial Oil & Horticultural Crop Production paid-up capital 9,091,346.24 shiinle ketema Tel ----- “industry
17. Habashi macaroni factory paid-up capital 11,248,782.99 jigjiga ketema Tel ----- “industry

C. Manufacturing of steel, glass and glass products, equipment’s, spare parts, plastic, furniture, paper and paper products factories (thirty strata)

18. Huble Blocet machine paid-up capital 2,136,403.33 jigjiga ketema Tel ----- “industry
19. House Hold and Office furniture paid-up capital 15,060,243.64 jigjiga ketema Tel 0910517136 “industry
20. Addo Foam Factory paid-up capital 16,184,524.13 jigjiga ketema Tel 0910517136 “industry
21. Shire Foam Factory paid-up capital 9,212,501.82 Doolo -Addo ketema Tel 0913251329 “industry
22. Jigjiga Foam Factory paid-up capital 16,913.000 jigjiga ketema Tel 0913242313“industry
23. Suhuura spare part paid-up capital 13,010,696.41 jigjiga ketema Tel----“industry

24, Esco spare part paid-up capital 13,010,696.41 jigjiga ketema Tel 0915741709
 “industry

25, Samale spare part paid capital 2,501,692.60 jigjiga Tel 0912625535

Appendix .2

E-VIEW OUT PUT

Annex 1. Table 4.7 Result Of Multiple Regressions For Model 1				
Dependent Variable: GOP				
Method: Panel Least Squares				
Date: 04/17/15 Time: 15:50				
Sample: 2009 2014				
Periods included: 6				
Cross-sections included: 25				
Total panel (balanced) observations: 150				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ARD	-0.0004506	0.001271	1.932060	0.0357
CR	-0.0305198	0.016074	0.323409	0.0069
DR	-0.0154966	0.322856	-0.479986	0.0221
SG	0.0640626	3.190480	2.081388	0.0395
Size	-0.0091107	3.10E-07	2.415073	0.0172
C	-2.063556	0.685608	-3.009819	0.0032
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.691025	Mean dependent var	0.226333	
Adjusted R-squared	0.581773	S.D. dependent var	0.187457	
S.E. of regression	0.169566	Akaike info criterion	-0.534293	
Sum squared resid	3.450314	Schwarz criterion	0.067834	
Log likelihood	70.07197	Hannan-Quinn criter.	-0.289668	
F-statistic	2.141417	Durbin-Watson stat	2.593042	
Prob(F-statistic)	0.002240			

Annex 2. Table 4.8 Result Of Multiple Regressions For Model 2				
Dependent Variable: GOP				
Method: Panel Least Squares				
Date: 04/17/15 Time: 17:15				
Sample: 2009 2014				
Periods included: 6				
Cross-sections included: 25				
Total panel (balanced) observations: 150				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IHD	-0.001506	0.001271	1.932060	0.0001**
CR	-0.0305198	0.016074	0.323409	0.0011**
DR	-0.0154966	0.322856	-0.479986	0.0301*
SG	0.0440626	3.190480	2.081388	0.0385*
Size	-0.0074307	3.10E-07	2.415073	0.0047**
C	-3.0473556	0.685608	-3.009819	0.0002**
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.622377	Mean dependent var	0.226333	
Adjusted R-squared	0.548618	S.D. dependent var	0.187457	
S.E. of regression	0.171949	Akaike info criterion	-0.506387	
Sum squared resid	3.547955	Schwarz criterion	0.095740	
Log likelihood	67.97901		-0.261762	
F-statistic	1.968608	Durbin-Watson stat	2.520667	
Prob(F-statistic)	0.005915			

Annex 3. Table 4.9 Result Of Multiple Regressions For Model 3				
Dependent Variable: GOP				
Method: Panel Least Squares				
Date: 04/17/15 Time: 18:40				
Sample: 2009 2014				
Periods included: 6				
Cross-sections included: 25				
Total panel (balanced) observations: 150				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
APD	-0.012642	0.016558	0.763484	0.0011**
CR	-0.278394	0.316847	-0.878639	0.0035**
DR	-0.003405	0.001980	-1.719386	0.0401*
SG	0.001258	3.09E-07	2.068456	0.0285*
SIZE	-0.005780	3.209480	1.968949	0.0037**
C	-1.444501	0.680251	-2.123482	0.0000**
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.702377	Mean dependent var	0.226333	
Adjusted R-squared	0.618618	S.D. dependent var	0.187457	
S.E. of regression	0.71949	Akaike info criterion	-0.527997	
Sum squared resid	3.547955	Schwarz criterion	0.095740	
Log likelihood	67.97901	Hannan-Quinn criter.	-0.261762	
F-statistic	1.968608	Durbin-Watson stat	4.520667	
Prob(F-statistic)	0.001215			

Annex 3. Table 4.10 Result Of Multiple Regressions For Model 4				
Dependent Variable: GOP				
Method: Panel Least Squares				
Date: 04/27/15 Time: 22:47				
Sample: 2009 2014				
Periods included: 6				
Cross-sections included: 25				
Total panel (balanced) observations: 150				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
CCC	-0.002240	0.000901	2.485424	0.0041**
CR	-0.011340	0.016048	0.706592	0.0025**
DR	-0.130123	0.318856	-0.408092	0.0201*
SG	7.11E-07	3.05E-07	2.332681	0.0185*
Size	-6.335836	3.163201	2.002982	0.0022**
C	-1.958478	0.661805	-2.959298	0.0000**
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.553792	Mean dependent var	0.226333	
Adjusted R-squared	0.457625	S.D. dependent var	0.187457	
S.E. of regression	0.167915	Akaike info criterion	-0.553856	
Sum squared resid	3.383470	Schwarz criterion	0.048271	
Log likelihood	71.53922	Hannan-Quinn criter.	-0.309231	
F-statistic	2.265472	Durbin-Watson stat	2.625488	
Prob(F-statistic)	0.001100			