

**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES
FACULTY OF BUSINESS**

**WORKING CAPITAL MANAGEMENT AND FINANCIAL
PERFORMANCE OF MANUFACTURING
FIRMS IN ETHIOPIA.**

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JUNE 2020

ADDIS ABABA, ETHIOPIA

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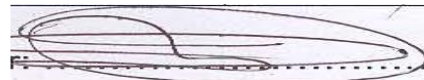
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DECLARATION

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

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This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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June 2020

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ACRONYMS

ACP-Average Collection Period

CCC- Cash Conversion Cycle

CATA- The ratio of Current Asset to Total asset

CLTA-The ratio of Current Liabilities to Total asset

ERCA- Ethiopian Revenues and Customs Authority

ICP-Inventory Conversion Period

GDP- Growth Domestic Product

ROA-Return on Asset

ROE-Return on Equity

WC- Working Capital

WCM - Working Capital Management

Abstract:

Maintaining working capital management is essential healthy for manufacturing firms because the major aims of manufacturing firms are profitability. The purpose of this study is to find out the relation between working capital management and financial performance of manufacturing firms. In this study uses from quantitative analysis methods: descriptive, correlation analysis(Pearson's correlation) and ordinary least square regression analysis is done by statistical software E-views software Version 8s' & SPSS statistics 21 is used. The variables used in working capital measurement are cash conversion cycle, average collection period, inventory conversion period, ratio of current asset to total asset and ratio of current liabilities to total assets. Financial performance is measured in return on asset and return on equity and a set of control variables including ratio of current asset to current liabilities (liquidity), firm size and total debt to total asset (leverage) are employed. A sample of 61 manufacturing firms the data comes from Ethiopian Revenue Custom Authority Branch office is used a period of ten years from 2008-2017 GC, the total observation is 610. The findings reveal that cash conversion cycle has negative and statistically significant relationships with financial performance (ROA & ROE). This means negative (shorter days) cash conversion cycle leads to higher profitability. Inventory conversion period has negative and significant relationships with financial performance while the ratio of current asset to total asset has positive and significant relationships with financial performance. The result of average collection period has negative correlation coefficient and no statistical significance while the regression result of average collection period is negative and statistically significance relationships with financial performance. The ratio of current liabilities to total asset has positive and statistically significant relationships with financial performance. In addition firm size and ratio of total debt to total asset have significant effect on profitability while ratio of current asset to current liabilities is no significance relationships. Based on the key finding from this study it has been concluded that short cash conversion cycle and inventory conversion period create profitability of the firms.

Key words: working capital management, financial performance.

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CHAPTER ONE

1.1. BACKGROUND OF THE STUDY

Company asset is divided into two distinct areas, fixed assets and current assets. Fixed assets are assets it is used for long term or permanent in nature owned by a business enterprise for ordinary course of business or not for sale, current assets are assets that may be reasonably be expected to be realized in cash or used in short term. Company current assets are those assets which are expected to convert into cash within one year (Muhammad, H., Ashfaq, U., & Waqas, M., (2016).

Working capital is the current capacity of an organization assets and liabilities add together running the business to short time creating a firm's competitive advantage in future years. Working capital has been discussed in holistic terms. The current assets, current liabilities, cash flow, and working capital policy derived from working capital have been examined primarily for their impact on a firm's value. K. V. Smith (1973). Firms always for cast cash flow estimation because of when the cash shortage is happen and when cash is excess to solve the problem easily.

Aloy, J. (2012) Working capital can be regarded as life blood of the firm and its efficient management can ensure the success and the sustainability of the firm while its inefficient management may lead the firm into a pitfall. How profitable or non-profitable a business or a firm can be can partly depend on how it effectively and efficiently manages working capital. Efficient management of working capital is a fundamental part of the overall corporate strategy in creating value for owners (Korankye, T., & Serwaah, R. (2013). Every company, regardless of its size and nature of business, needs essential measure of working capital. Consequently, effective Working capital management is the most critical component in looking after survival, solvency, liquidity and profitability of the concerned business organization (Mohamed, R., Abdol, F., Ahmar, S., & Sungip, N. (2018).

Working capital management is the ability to control effectively and efficiently current assets and current liabilities in a manner that provides the firm with maximum return on its assets and minimizes payments for its liabilities (Mogaka, D.M., & Jagongo, A., (2013). Current assets are cash and cash equivalents, marketable securities, accounts receivable and inventories; current

liabilities are accounts payable, expenses payable, including accrued wages and taxes and notes payable.

The effective working capital management is very important because it affects the performance & liquidity of the firms'. Working capital management decisions are very important and strategic because they affect the firm profitability and firm value (Gökhan, A. Vural, G. & Hüseyin, E. (2012).

Effective Working capital management expands the firms' free cash flow, and builds the companies' development opportunities to give return to the shareholders. Efficient management of working capital is a fundamental part of the overall corporate strategy to create the shareholders' value (Afza, T., & Sajib, M. N. (2007). The management of working capital plays an important role in maintaining financial health of the firm. So firms concentrate special concern on these issues.

Ibrahim, Y.N., Mohammed, A.M, & Abdul-Aziz, F. (2017) the goal of working capital management is to ensure that firms are able to manage their operational expenses and also meet their short term debt obligations by maintaining adequate cash flows therefore it is crucial for finance managers to adopt suitable approaches to working capital management in order to increase firms' profitability and also create value for their investors. Though profitability is a major goal of firms, insolvency problems may occur when firms concentrate too much on profitability at the expense of liquidity. Based on this reason working capital management plays an important role in financial performance of the firm.

The Ethiopian economy has experienced strong and broad-based growth over the past decades expansion of the services and agricultural sectors accounts for most of this growth, while the Manufacturing sector performance was relatively modest (World Bank, 2017).

Manufacturing industries play a critical role in economic growth and development. Manufacturing provides a significant source of demand for goods and services in other sectors of the economy, and these sales to other industries are not captured in measures of manufacturing sector GDP but are counted in the broader measure of its gross output Audax, A. (2018).

According to (NBE annual report, 2016/2017) the Ethiopian economy which had exhibited 9.9 percent average annual growth during 2012/13 - 2016/17, registered 10.9 percent growth in

2016/17. Accordingly, the share of industry in GDP rose sharply to 25.6 percent in 2016/17 from 16.7 percent while that of agriculture largely remained at around 36 percent. In contrast, the share of service sector dropped to 39.3 percent from 47.3 percent a year ago. This gradual but steady shift in the structure of the economy reflects the government's policy of developing manufacturing sector and promoting export-led growth while continuing to give due attention to modernizing the agriculture sector which has dominated for long the country's economic base.

Purpose of this study is that this area is almost untouched in Ethiopia or very little research has been done. This research is focusing on working capital management and financial performance for a sample of working capital in manufacturing firms in Ethiopia.

1.2. Statement of the problem

Working capital management and profitability of firms is directly related when working capital is at maximum level then the firms maximize their value or their profit, on the other hand firms working capital is minimum or average it decrease the sales then the profit is decline. Based on this reason working capital management is very essential to firms because the ultimate goal of firms is maximization of profit for its shareholders', business owners or investors. On their study of Gill, A., Bigger, N., & Mathur, N. (2010) firms may have an optimal level of working capital that maximizes their value. Large inventory and generous trade credit policy may lead to high sales volume. The larger inventory also reduces the risk of a stock-out. Trade credit may stimulate sales because it allows a firm to access product quality before paying. On the other side large inventory holding is high handling cost and costs associated with inventory cost is consumed and generous trade credit also affects collectability of receivables.

Findings in previous researches show, there is strong association between firms' working capital management and firms' profitability (Gökhan, A., Vural, G., & Hüseyin, E. (2012), Mohamed, R., Abdol, F., Ahmar, S., & Sungip, N., (2018) and Paul, P., & Mitra, P., (2018)). Many research study working capital management and financial performance of manufacturing firms in the developed world because the history of inception of industrial revolution of manufacturing firms is began, the firms founded long period of time (the financial data is easily available), the economy is more liberalized the government are more emphasis on these sector, the investors' appetite to invest in this sector is high because there are high level of return, the financial institutions and the financial market are well organized and developed, the documentation of financial data is easily available based on this reason there are money research is done. Contrary in developing world like our country Ethiopia the economy is monopolize in the hands of government for long period of times, the firms desires high level of capital intensive, financial institution are limited resources their lending capacity is minimum, there is no financial market and the culture or willingness of investor to invest in this sector is minimum, based on the above reason manufacturing firms are infant. In addition the financial data (balance sheet, Income statement & cash flow) is not easily available so many researcher doesn't willing to study.

Finally lack of standard research or empirical research (published Article, journal) on the area, Ethiopian company's managers to have limited awareness in relation to working capital management to increase firms performance. To the best of researcher's knowledge, few research

has been done in Ethiopia most of them uses five years financial data, this research will use ten years and other researcher conducted on selective part of manufacturing firms (manufacturing firms in private, in public or in Share Company) or metal manufacturing, leather etc.; this research will use all manufacturing firms in Ethiopia it could be private limited company, share company or metal manufacturing etc. The variables used slightly different from other researcher, this research will use is liquidity, and size of the firm and leverage as control variables but others researchers used sales growth, total debt to total asset, inflation and gross domestic product. In the independent variable this research will use cash conversion cycle, average collection period, inventory conversion period, ratio of current asset to current liability, ratio of current liability to total Asset. But other researcher used cash conversion cycle, account payables days, inventory holding periods and account receivables days. Finally these serious shortcomings of the current literature, this study contributes to the existing literature by studying the Ethiopians manufacturing firms.

1.3. Basic Research Questions

Generally, the researcher conducted this study with the aim of providing answers to the following basic research question.

- Does cash conversion cycle affect profitability of the firm?
- To what extent average collection period affect profitability of the firm?
- How do Inventory conversion period affect profitability of the firm?
- How ratios of the current assets to total assets affect profitability of the firm?
- Does the ratio of the current liabilities to total assets affect profitability of the firm?

1.4. Objective of the study

1.4.1. General objectives

The primary objective of this research is to examine Working Capital Management affects the Financial Performance (profitability) of Manufacturing Firms in Ethiopia.

1.4.2. Specific objectives

To achieve the general objectives, the following specific objectives were used:-

- To determine if there is a significant relationships between cash conversion cycle (CCC) and profitability of a firms
- To establish whether there is a significant relationships between average collection period (ACP) and profitability of a firms
- To determine if there is a significant relationships between inventory conversion period (ICP) and profitability of a firms
- To examine if there is a significant relationships between current asset /total Asset (CATA) and profitability of a firms
- To ascertain if there is a significant relationships between current liabilities / total Asset (CLTA) and profitability of a firm

1.5. Hypotheses of the study

The following hypotheses were formulated for the study.

H01:- There is no significant relationship between cash conversion cycle (CCC) and financial performance measures.

H02:- There is no significant relationship between average collection period (ACP) and financial performance measures.

H03:- There is no significant relationship between inventory conversion period (ICP) and financial performance measures.

H04:- There is no significant relationship between current Assets /total asset (CATA) and financial performance measures.

H05:- There is a significant positive relationship between current liabilities /total asset (CLTA) and financial performance measures

1.6. Significances of the study

Doing a research has its own reason or significance in which it contributes for the improvement of understanding the manufacturing firms and its profitability. Moreover manufacturing companies in Ethiopia is vital for job creation and gross domestic product growth in the economy.

The researcher believed that, the problem is almost untouched and there is a knowledge gap on the area as well as in its effect. Ethiopian companies financial managers or Investors understanding the factors that affect their financial performance of working capital affects the profitability of the firm, as such make better decision on these factors as well as concentrate on them in order to improve. Finally the study additional knowledge and reference for other researchers.

1.7. Scope and limitation of the study

1.7.1. Scope of the study

This research focused on working capital management and financial performance of manufacturing firms in Ethiopia. The total population of sampling are 202 manufacturing firms, the sample size is delimited to 61 firms and the analysis is done for ten years from 2008-2017. The variables used are delimited to the three types of variables: -dependent, independent and control variables are described in chapter three. The methodology is delimited only to quantitative method with descriptive statistics, correlation and regression analysis tools.

1.7.2. Limitation of the study

Most of manufacturing firms is concentrated around in Addis Ababa and out skirts, Addis Ababa is the capital city of Ethiopia and few firms are distributed to regional part of the country based on their dispersed location of firms our sample size is limited to time and financial constraints.

Secondly the primary data was not used because of that the ultimate data for the study couldn't be found simply using questioner or face to face interviews with concerned bodies. Finally the result of the paper is restricted to selected manufacturing firms in Ethiopia, the topic requires much time and money to conduct and come up with important conclusion.

1.8. Organization of the research report

This thesis consists of five chapters, including the first introductory chapter just discussed. The second chapter discusses the theoretical, empirical and conceptual frame works is discussed. The research methodology with the description of variables and model specification of the study is presented in the third chapter. In the fourth chapter, the results and discussions of empirical data collected and analyzed using descriptive statistics, correlation analysis and econometrics models are presented. In the final chapter, summary of findings of the study, conclusion and possible recommendations are provided.

CHAPTER TWO

LITERATURE REVIEW

2.1.Introduction

The chapter explores the literature that focuses on the area of the working capital management and the performance of manufacturing firms. The chapter commences by reviewing the theories that inform the study. Empirical studies that discuss the link between working capital management and performance of firms.

2.2. Theoretical Review

The term “working capital” originated with the old Yankee peddler, who would load his wagon with pots and pans and then take off to peddle his wares. His horse and wagon were his fixed assets, while his merchandise was sold, or turned over at a profit, and thus was called his working capital Brigham, E., & Ehrhardt, M. (2011).

According to Paul, P., & Mitra, P. (2018) the term working capital refers to the quantum of fund required to maintain day-to-day expenditure on operational activities of a business enterprise.

There are two possible interpretation of working capital concept these are balance sheet concept and operating cycle concept. The balance sheet concept is represented by the excess of current assets over current liabilities and is the amount normally available to finance current operations. The operating cycle concept consists of three primary activities: purchasing resources, producing the product, and distributing (selling) the product. These activities create funds flows that are both unsynchronized and uncertain. Unsynchronized because cash disbursements (for example, payments for resources purchases) usually take place before cash receipt (for example, collection of receivables). They are uncertain because future sales and costs, which generate the respective receipts and disbursements, cannot be forecasted with complete accuracy. V. K. BHALLA (Financial management & policy)

Aloy, J. (2012) firm is required to invest more in current assets rather than fixed assets to maintain adequate liquidity. However, the firm’s decision about the level of investment in current assets involves a trade-off between risk and return. When the firm invests more in current assets it reduces the risk of illiquidity, but loses in terms of profitability since the opportunity of earning from the excess investment in current assets is lost. The firm therefore is required to strike a right balance.

Working capital management is managing a firm's short term assets and liabilities. Financial Management is coordination of planning, controlling and leading of a firm's financial resource. The major duties of a financial manager are Plan the organization assets and liabilities, control and lead the profitability of the organization. Working Capital management is also called net working capital (NWC), is the difference between net operating assets and net operating liabilities. Net operating assets is easily convertible to cash with one year and net operating liabilities are short term liabilities with paid in one year. Managers of a firm is efficiently control the working capital of an organization because the profit and loss is mainly drive the in efficiently or unplanned uses of current assets and liabilities Brigham, E., & Ehrhardt, M. (2011).

In their studies Terfasa, S. (2018) defined working capital management is an important part of financial management, the main purpose of the Working capital management is managing the current asset and current liabilities effectively and maintaining adequate amount of both current asset and current liabilities.

Working capital management is the ability to control effectively and efficiently the current assets and current liabilities in a manner that provides the firm with maximum return on its assets and minimizes payments for its liabilities. The goal of the management of working capital is to promote a satisfying liquidity, profitability and shareholders' value Mogaka, D. M., & Jagongo, A. (2013).

It is administer a day to day financial activity of the firms, whether a company or a firms is manufacturing, service giving or construction company liquidity or high level of cash availability is important for running the business. A manufacturing firms purchase raw material or semi raw materials then convert to finished goods and sale to customers, a service giving company rendering service to their customers and a construction company building projects based on this reasons optimizing their working capital management is necessary sustainable of the organization life.

Lazaridis, I., and Tryfonidis, D. (2006) says there seems to be a strong relation between the cash conversion cycle of a firm and its profitability. The three different components of cash conversion cycle (accounts payables, accounts receivables and inventory) can be managed in different ways in order to maximize profitability or to enhance the growth of a company; sometimes trade credit is a vehicle to attract new customers. Most of business runs with trade

credit so huge amount of working capital is important for profitability. Cash conversion cycle (CCC) is Purchase or produce inventory, hold it for a time, and then sell it and receive cash. Accounts payable, or trade credit, arises spontaneously as a result of credit purchase, firm sells goods to a customer on credit, an account receivable is created and inventory management are to ensure that the inventories needed to sustain operations are available, but to hold the costs of ordering and carrying inventories to the lowest possible level. Most popular measurement of working capital management is cash conversion cycle (CCC) which is the time lag between purchase of raw materials or render of services and the collection of cash from the sale of goods or services rendered. If the time lag is longer, it means greater investment to working capital components and this causes greater financing needs. So interest expenses will be higher which leads to higher default risk and lower profitability. Use of profitability as an indicator of firm performance, there can be a reverse relationship between CCC and firm performance Gökhan, A., Vural, G., & Hüseyin, E. (2012).

Liquidity is affected by cash, credit, inventory, and accounts payable that form part of the overall cash flow of a business. May result in insolvency and eventually bankruptcy as the business's liabilities exceed its assets. Working capital approaches varies according to business types. A manufacturing company put intensely in extra parts and components and has high amount of account receivables. A food retailer however, may have large inventories of products for resale but with only small amount of receivables. The manufacturing companies obviously need carefully thought on its receivables policy, while the food retailer may not grant any credit at all. WCM is dealing with the current assets and liabilities and how these two components correlate with each other. If companies do not have capacity to keep up an optimal level of working capital, they will have difficulty to run its daily operation. The current assets of a company should be sufficient to cover its current liabilities to ensure a reasonable margin of safety. Each of the current assets must be managed effectively to ensure that company able to pay its short-term obligation (Mohamed, R., Abdol, F., Ahmar, S. & Sungip, N. (2018).

Working capital management involves two basic questions: (1) What is the appropriate amount of working capital, both in total and for each specific account, and (2) how should working capital be financed? Note that sound working capital management goes beyond finance. Indeed, improving the firm's working capital position generally comes from improvements in the

operating divisions. For example, experts in logistics, operations management, and information technology often work with engineers and production specialists to develop ways to speed up the manufacturing process and thus reduce the goods-in-process inventory. Similarly, marketing managers and logistics experts cooperate to develop better ways to deliver the firm's products to its customers. Finance comes into play in evaluating how effective the firm's operating departments are relative to other firms in its industry and also in evaluating the profitability of alternative proposals for improving working capital management. In addition, financial managers decide how much cash their companies should keep on hand and how much short-term financing should be used to finance their working capital Brigham, E., & Ehrhardt, M. (2011).

Components of Working Capital Management

There are four major components of working capital management these are cash management, Receivable management, Payables management and Inventory management Solomon, T. (2018).

- Cash management is properly control cash activities of an organization. Cash means cash in hand and cash in bank. Cash in hand means cash in casher for utilization of daily activities of an organization. Cash in bank means cash in a bank account. Financial manager must doing the daily cash management system, strong internal control over cash management is important for an organization.
- Receivable management Receivables are asset accounts representing amounts owed to the firm as a result of sale of goods or services in the ordinary course of business. Receivables constitute a significant portion of the total assets of the business .The size of the receivable is determined by a number of factors such as level of sales, credit policies, and trade credit. Level of sales is the most important factor in determining the size of accounts receivable. In fact, even in the same industry, a firm having a large volume of sales will be having a larger level of receivables as compared to a firm with a small volume of sales. Sales level can also be used for forecasting change in accounts receivable Solomon, T. (2018).
- Payables management:- payables are classified as short term or long term. Examples of payables are Account payable, Note payable. Payables are determined by the size of the organization resources.

- Inventory management: - Inventories (raw materials, working on process and finished goods) is easily stolen by employees or other body so proper controlling and strong system is important. Most of big firm's inventory management is supporting with computer technology. Purchase developed software programs and implement the system. Examples of Inventory management software's are ORACLE, ACCPAC and ERP (Enterprise Resource Planning). Inventory management is an ongoing and dynamic process. To keep out the inefficiencies in system, process and physical operations, calls for active management participation and continuous improvement in all processed and systems that are involved in inventory management Wauna, S. &Obwogi, J. (2015).

Working capital management policy

Investments in operating current assets must be financed, and the primary sources of funds include bank loans, credit from suppliers (accounts payable), accrued liabilities, long-term debt, and common equity. Working capital policy relates to the management of short term assets and liabilities within the maturity period of one year.

Types of working capital management policy:-

- Relaxed working capital policy is a firm would hold relatively large amounts of each type of current asset.
- Aggressive Approach is the situation for a more aggressive firm that finances some of its permanent assets and some parts of fixed asset collateral with short-term debt. Baghiyan, F. (2013) Study of 134 stock firms in Iran for the period 2005-2011 on the impact of working capital management on management performance as a dependent variables are return on assets and return on equity and independent variables, the politics (conservative, moderate, aggressive) financing and investment. Order to measure performance as management and policy, working capital is considered. Firm size, sales growth, and leverage ratio as control variables. Results suggest that working capital management and performance management is a meaningful relationship and selection policy aggressively financing and investment in working capital will lead to improved management companies.

- Conservative Approach is to use long-term sources to finance all permanent operating capital and some of the temporary current operating assets.

Firms face a number of important decisions in their current operations and one of these important decisions concerns the efficient management of liquidity. This decision is critical, as it is the reason for which many firms get to bankruptcy (Mongrut, S., Fuenzalida, D.O., Cubillas, C. Z., &Cubillas, J. Z. (2014). The cash conversion cycle is one of the measurement of liquidity if a shorter cash conversion cycle the firm is not a liquidity problem on the other hand cash conversion cycle is longer firms could be face a problem of liquidity. The most liquid asset are cash, marketable securities, account receivables and inventories.

The ultimate goal of manufacturing firms is profitability. Manufacturing firms is investing their resources first then collect their return after some consecutive period. Some assumption about profitability if an organization is profitable the business life cycle indicate a growing company, contrary profitable is decrease it is declining & maturity stage of firms that is declining the sales so firms don't invest in this area because the sector is saturated. The trade-off between liquidity and profitability when he argued that working capital management can play an essential role not only in a firm's profitability and risk, but also in its value Napompech, K. (2012).

2.3. Empirical Review

Many researchers have studied working capital management and profitability of manufacturing firms from different views in different environments. The following ones are very useful for this research:

Korankye, T., & Serwaah, R. (2013) by using a sample of six Ghana's manufacturing firms for the period of from 2004 to 2011 used working capital cycle and gross operating profit margin as proxies (substitutes) for working capital management and profitability respectively. While leverage, interest cover and the ratio of current assets to total assets are used as control variables. The study found working capital cycle (used as proxy for working capital management) is statistically significant but negatively associated with firm profitability. The study also found that inventory turnover period, account receivables collection period and account payables payment period each negatively correlates with profitability. Finally while leverage negatively but significantly relates to profitability, interest cover and the ratio of current to total assets have significantly positive relation with profitability. He suggest that effective working capital management is a necessity for improving firm profitability.

Napompech, K. (2012) by using a sample of Thailand 255 manufacturing firms for the period of from 2007 to 2009 used effects of working capital management on profitability or the relationship between working capital management, as measured through the cash conversion cycle, and corporate profitability. The study found that the essential role of working capital management in value creation of firms by shortening the cash conversion cycle. However, the findings of this research confirmed that only two actions can increase profitability: reducing the inventory conversion period by producing and selling goods faster and reducing the receivables collection period by accelerating collections. The results of this study showed a significant negative relationship between firm profitability and the inventory conversion period and receivables collection period. This study also found an inverse relationship between the payables deferral period and profitability, which may be a result of less profitable firms taking longer to pay their suppliers

Paul, P. & Mitra, P. (2018) conducted a study analysis of the effect of working capital management on profitability of the firm: evidence from Indian steel industry. The research adopted the quantitative method of research approach to test a research hypothesis. The survey

use listed of 35 steel firms in Centre for Monitoring Indian Economy (CMIE) during the period of from 2000-2016. In the study the researchers uses by using the panel data regression analysis. Panel data is a data set where both time series and cross sectional data have been pooled. The study has taken into consideration four independent variables, that is, current ratio, quick ratio, debtors turnover ratio and finished goods turnover ratio which act as the indicators of working capital use in the industry and the dependent variable is firms profitability (ROA). The result of the study indicates that the impact of working capital management on Profitability of the firms of Indian steel industry has been significant. The study also indicate quick ratio and DTR have positive effect and are statistically significant to the return on asset. The firms can invest more in the productive purpose and focus on the credit sales of the company which in turn increases the profitability of the company. The investment in the liquid assets of the firm also has a positive impact on the profitability of the firm. Hence, the study clearly asserts that sample companies of the steel industry have enough scope to enhance their profitability by the use of working capital in a more efficient way.

In their study of Aloy, J. (2012) investigated the relationships between working capital management & financial performance of manufacturing sector in Sri Lanka. A sample of 30 manufacturing firms listed on the Colombo Stock Exchange was used for this study. The Data collected from annual reports of the sample firms from 2008-2011. In the research correlation and regression analysis were used for analysis. Cash conversion cycle, current asset to total asset, current liabilities to total assets are the independent variable and financial performance (return on asset and return on equity) as dependent variable used in their analysis. They found there is a negative relationship between cash conversion cycle and performance measures. And also The current assets to total assets ratio shows a weak positive association with the performance measures of return on assets and return on equity used in the study. This reveals that, manufacturing firms in Sri Lanka follow conservative policy.

In their study Kofi, A. R., Awunyo –Vito, D., &Lawer, A. P. (2013) the relationship between working capital management and profitability of listed manufacturing firms in Ghana. The study used secondary data collected 13 listed manufacturing firms in Ghana stock exchange, covering the period from 2005-2009. Data which were the audited annual financial reports were collected from the Fact Book of the Ghana Stock Exchange and the web portals of the firms. The

dependent variable, firms' profitability, was measured by Return on Equity. The independent variables, account receivables days, account payable days, cash conversion cycle and current ratio. Firm size which is represented with LOS and defined as natural logarithm of sales and current assets turnover represented with CAT and computed as sales divided by current assets have been used as control variables. The study use panel data methodology. That uses cross-sectional and time series observation were combined and estimated. The conclusion or suggestion of the researcher is accounts receivable days significantly negatively influence profitability of listed manufacturing firms in Ghana. This means that to improve profitability, managers of listed manufacturing firms in Ghana should reduce their average collection period. The positive and insignificant relationship between accounts payable days and profitability implies that managers should concentrate more on other aspects of WCM than payable days in their deliberations to improve profitability of listed manufacturing firms in Ghana. We also observe that cash conversion cycle (CCC) significantly positively affects profitability of listed manufacturing firms in Ghana. This draws our attention to the fact that, enactments of local laws that protect indigenous firms and restrict the activities of importers are eminent to promote increase demand for locally manufactured goods both in the short and long runs in Ghana. The study further finds that, current asset is also significant and positively impact profitability. Thus, managers of listed manufacturing firms in Ghana should keep enough current assets to match their current liabilities. In addition to the above, we also show that sales significantly and positively affect profitability of listed manufacturing firms in Ghana. In this light, managers should enhance their product quality and also embark upon effective advertising in order to boost sales. Also, the significantly positive association between profitability and current assets turnover implies that managers of listed manufacturing firms in Ghana should increase their current asset holdings in order to generate more sales. Finally the researchers were suggested, managers institute prudent WCM policies so as to overcome liquidity crisis and enhance their profitability. The matching of current assets and current liabilities should be maintained at an optimum level since it influences how short-term obligations are honored. Also, managers can improve the profitability and value of their firms by reducing their accounts receivable days and also work towards maintaining an optimal cash conversion cycle level.

To test the relationship between working capital management and profitability, Gill, A., Biger, N., & Mathur, N. (2010) used a sample of 88 American firms listed on New York Stock

Exchange for a period of 3 years from 2005 to 2007 was selected. The research is a connection between empirical observation and mathematical expressions of quantitative relationships. Independent variable are number of days of account receivables, number of days of account payables, number of days of account inventory and cash conversion cycle, the dependent variable is gross operating profit and also the control variable are firm size, financial debt ratio, and fixed financial asset ratio. The firm size measured by logarithm of sales. They found that slow collection of accounts receivables is correlated with low profitability. Managers can improve profitability by reducing the credit period granted to their customers. The average days of accounts payable and profitability of the firms, no statistically significant relationship between these variables, the relationship between the average number of days the inventory is held and the profitability no significant relationship and also a negative relationships between profitability (measured through gross operating profit) and average days of account receivables. Cash conversion cycle and corporate profitability is a positive relationship. Finally, no significant relationship between firm size and its gross operating profit ratio.

Muhammad, H., Ashfaq, U., & Waqas, M. (2016) in their study the relationship between working capital management and profitability of tobacco industry in Pakistan. The study is based on secondary data collected from audited financial statements of selected companies of tobacco industry of Pakistan for the period of 2005-2014. The audited financial statement collected from firm's web sites and some have been found in the Karachi Stock Exchange data base. By using correlation analysis is used to check the relationships between the variables and also multiple regression analysis is used to examine the effect of working capital management on profitability of firms. The independent variable is Account receivables, Account payables, Inventory and cash conversion cycle and the dependent variable is profitability that is Return on asset. The findings of the study indicated negative relationship between working capital management (measured through Inventory, Account payable and cash conversion cycle) and profitability (measured through return on assets) and also small positive relationships between account receivable and return on assets. Based on the findings managers must improve the efficiency of working capital management.

Ibrahim, Y., Mohammed, A., & Abdul-Aziz, F. (2017) investigated the impact of working capital management on corporate performance the study used secondary data obtained from the

Ghana Stock Exchange (GSE) annual financial statements of the selected five Ghana firms from 2010-2015. The firm performance is measured by Return on Asset (ROA) that is the dependent variable and the independent variables are average collection period, inventory turnover, cash conversion cycle, current ratio and the firm size (measured by log of sales) as control variables. In this study a linear model is applied. The result of the study shows that (1) the average collection period has a negative significant impact on firms Performance. This implies that for firms to enhance their performance there is the need to minimize the number of days use in retrieving debts from their customers; (2) positive and significant relationship between average payment period and firms performance indicates that firms will perform better by using longer periods to meet their debt obligations; (3) negative and significant impact of cash conversion cycle on firms performance. This implies that firms can enhance their performance if they are able to convert their resources to cash within the shortest possible time; (4) positive and significant relationship between current ratio and firm performance suggests that maintaining sufficient current assets will aid firms to meet their debt obligations and firm size have a negative relationship with firm performance. Based on the finding the management of the firm maintain sufficient and appropriate level of working capital is necessary.

Vural, G., Gökhan, A.S., & Hüseyin, E.Ç., (2012) surveyed on Turkey firms to find out the working capital management affects firm's performance (profitability). Seventy five selected listed companies on the Istanbul Stock Exchange in Turkey for the period 2002-2009. The dependent variable is profitability (GOP) and firm value. Profitability is Gross operating profit that is sales minus cost of goods sold divided by total assets minus financial asset and firm size is measured by Tobin Q which is equal to market value plus book value of debt divided by total assets. The control variables are firm size and financial leverage. The firm size is measured by natural logarithm of total assets and financial leverage is measured by dividing total liabilities to total assets. Account receivables (number of days accounts receivable), Account payable (number of days accounts payable), Inventory (Number of days Inventory), operating cycle and cash conversion cycle are the independent variables. The relationships between the variables are examined by making use of the correlation and dynamic panel data analysis. The finding of the study are significant relations between working capital management and firm performance, collection period of account receivables and cash conversion cycle are negatively related with firms profitability, relationship between other working capital management components and

firms profitability is insignificant, relationship between leverage and firms profitability is negative while the relationship between firm size and firms profitability is positive, the results for firm value (TOBINQ) are insignificant except cash conversion cycle and leverage, the regression analysis, there is a positive relationship between cash conversion cycle and firm value while there is a negative relationship between leverage and firm value. Based on the finding extending the cash conversion cycle will increase the firm value and lower leverage will lead to increasing of the firms' value.

Ali, A., &Atif, A. (2012) investigated Working Capital Management Affects the Profitability of affirms in this study the researcher compared and studied 15 research paper of different researcher. Data is obtained from the website of State Bank of Pakistan having balance sheet analysis report of joint stock companies listed on the Karachi Stock Exchange from 2003 to 2008, the model uses the researcher is Ordinary Least Square (OLS) model. The comparable data are working capital, total assets and profitability. Finally the results are efficient management of working capital can lead a firm towards profitability, firms should improve their receivables and other currents assets components for sufficient working capital. Efficient management of inventories enhances the profitability of firms. It is concluded that firms with higher working capital have higher ratio of profitability and firms with higher total assets also have higher ratio of profitability

In their study Mogaka, D.M., &Jagongo, A. (2013) present empirical evidence about the effect of working capital management on firms' profitability of Kenyan manufacturing and construction firms by using secondary data from 2003 to 2012, financial data obtained from the company's annual reports. Balanced panel data of five manufacturing and construction firms each which are listed on the Nairobi Securities Exchange (NSE) and the Kenya Capital Markets Authority, the model is used Pearson's correlation and Ordinary Least Squares regression. The independent variables are average collection period, inventory conversion period, average payment period and cash conversion cycle; the dependent variable is profitability of the firm it is measured by return on asset (ROA) and finally the control variables are sales growth, firm leverage, and current ratio and firm size. The study found out existence of negative correlation between return on assets and the firms average collection period and cash conversion cycle. However, the study

finding suggests that there is a positive correlation between Return on Inventory Holding Period, Accounts Payment Period.

Working capital management affect profitability of Ghanaian manufacturing firms was studied by Boating, K. &Peprah, G. (2018) a balanced panel of 11 manufacturing companies quoted on the Ghana Stock Exchange was used. The study covered the period 2011 to 2017. The models of the study inferential statistic- correlation and panel regression analysis is used. The profitability is measured by the return on assets (ROA) it is dependent variable; cash conversion cycle (CCC), Account receivable (AR), and Account payable (AP) are independent variable and firm size (SIZE), firm leverage (LEV) and current ratio (CR) were introduced as control variables. The study concluded that a statistically significant negative relationship exists between working capital management and profitability.

UIHassen, N., Muhammed, M., Amjad, M., &Hussain, M. (2014)on their study on effects of working capital management on firm performance, the data comes from annual reports of companies consists of a balanced panel of 48 firms on the Karachi Stock Exchange (KSE) Pakistan during 2007-2010. The model is used panel econometric technique namely pooled ordinary least squares (OLS) is used to estimate the relationship between working capital and firm performance. Gross profit ratio, return on asset, and return on equity are used a dependent variable in the study, the independent variable are average age of inventory, average collection period, and average payment period. In addition, some variables such as firm's size, age, and leverage were also included in the model in order to control the firm-specific factors that may affect the performance. Gross profit ratio is measure ratio of gross profit to net sales, return on asset is ratio of net profit after taxes to total assets and return on equity ratio of net profit after taxes to stockholders equity; the measurement of the independent variable are average age of inventory is ratio of No. of working days (i.e., 360) to inventory turnover, average collection period is ratio of trade debt to average sales per day average sales per day is computed by dividing the total sales on No. of working days (i.e.,360) , average payment period ratio of trade payable to average cost of goods sold per day average cost of goods sold per day is computed by dividing the cost of goods sold on number of working days (i.e., 360) and the dependent variables are firm's size is measured by natural logarithm of total assets, firm's age is measured by ratio of total debt to total assets and leverage log of age. The result indicates that the average

age of inventory is positively related to gross profit margin and return on asset and the relationship is insignificant but positive sign may be because of increasing sales which leads to higher profit and thus fewer inventories. Contrary average age of inventory is negatively related to return on equity which indicates that the longer inventory is tied in the less working capital is available, hence lowering of profit. Average collection period is positively related to all performance measures used in this study, the positive relationship may be because of the fact that customers do not require more time to assess quality of product they buy from firms with increasing profitability. Average payment period is positively related to gross profit margin and return on equity, positive sign indicate that the firm's profitability is increased by a day lengthening of the number of days it takes firms to settle their creditors. Moreover, the positive sign does make economic sense, the longer a firm delays its payments the higher level of working capital levels it reserves and uses in order to increase profitability. Control variables are concerned firm size is positively related with gross profit margin and return on asset. Moreover this relationship is found statistically significant. Alternatively, firm size is negatively related to return on equity however this relationship is found insignificant. Leverage is negatively related to gross profit margin and return on asset. Moreover, this relationship is found statistically significant. On the other hand, leverage is positively associated with return on equity but the relationship is found insignificant. The negative relationship between leverage and profitability confirms the predictions of pecking order theory suggesting that profitable firms tend to borrow less due sufficiency in internally generated funds. Firm age is negatively related to gross profit margin and return on assets. Moreover, this relationship is found statistical insignificant. On the other hand, age is positive related to return on equity but the relationship is insignificant. The positive relationship indicate that age has positive influence on the working capital requirement and this may be explained by the fact that older firms can get external financing more easily and under better condition. Finally the researcher concludes these empirical findings indicate that management of working capital has material affects of firm performance.

The effect of working capital management on profitability three Public manufacturing companies on the Dares Salaam Stock Exchange (DSE) is used for a period of ten years financial statement (statement of comprehensive income and statement of financial position) from 2002-2012 with the total of 30 observations study Ponsian, N., chrispina, K., Tago, G., and Mkiibi, H. (2014) data is analyzed on quantitative basis using Pearson's correlation. Pearson's correlation is used to

measure the degree of association between profitability and working capital variable, the model is used Ordinary Least Square Regression. The Dependent variable is Gross Operating profitability (GOP) it is measures the profitability of the firm; Average Collection Period (ACP), Inventory turnover in days (ITD), Inventory conversion period (ICP), Average Payment Period (APP) and Cash Conversion Cycle (CCC) are independent variable and the control variable are the size of the firm measured by natural logarithm of sales. The result of the study is (1) sufficient level of working capital should be present for smooth running of a company regardless of the nature of business. The management of a firm can create value for their shareholders by reducing the number of day's accounts receivable; this is because as the ACP decreases, the profitability of the manufacturing firms increases. It is noted that as ACP increases, the level of bad debt also increases which in the long-run results to reduction in profitability.(2) The management can also create value for their shareholders by reducing their inventories to a reasonable level since the results indicate that profitability increases as the ITD decreases. When the ITD increases, storage costs also increase in order to keep the available inventory. Firms can also take long time to pay their creditors in as far as they do not strain their business relationships with these creditors as indicated by profitability increases with an increase in APP. In addition, firms can also reduce the liquidity level in order to gain the overall firms' performance; this is indicated by a negative relationship between profitability and liquidity. (3) Firms are capable of gaining sustainable competitive advantage by means of effective and efficient utilization of the resources of the organization through increasing of the cash conversion cycle.

Nobanee, H. & Haddad, A. (2014) on their study Working Capital Management and Corporate Profitability Japanese firms from 1990 -2004 listed on the Tokyo Stock Exchange 2,123 firms are in the sample. The organizational structure of Japans firms its name is called Keiretsu. "Keiretsu" is a complex net of relationships that links banks, manufacturers, suppliers, and distributors with each other and with the Japanese government. Receivable collection period, the inventory conversion period, the payable deferral period and the cash conversion cycle are independent variables, return on investment is dependent variable. The researcher applied robust regression to test the effect of cash conversion cycle and profitability of firms. Finally they conclude that shorting cash conversion cycle, receivables collection period and inventory conversion period will be profitability of Japans firms.

TewodrosDinberu (2013) examined working capital management and the firm performance evidence from selected public enterprises under the supervision of Privatization and Public Enterprises Supervising agency (PPESA) 10 selected public enterprises from 2008 to 2012 audited financial statements in Addis Ababa, Ethiopia. The study used 14 variables dependent variable are operating profit margin, return on asset and return on equity, the independent variable are the number of days accounts receivable, number of days inventory, number of days accounts payable, cash conversion cycle, current ratio and quick ratio as proxy of liquidity, the ratio of the current assets to total assets as a proxy of the working capital investing policy and the ratio of the current liabilities to total assets as a proxy of the working capital financing policy and the control variable are the size of the firm, sales growth and total debt to total assets as proxy of financial leverage. The results show that the relationship between return on asset and return on equity with number of day's inventory are statistically insignificant. There exist positive significant relationship between number of day's accounts payable with return on asset and operating profit margin. But, no statistically significant relationship found between number of days accounts payable and return on equity. The results also show that there exists significant negative relationship between cash conversion cycle and profitability measures of the sampled Enterprises, but no statistically significant relationship was found between cash conversion cycle and return on equity. The two traditional measure of liquidity (current ratio and quick ratio) affect return on asset and operating profit margin negatively and significantly, but both do not affect return on equity significantly. No statistically significant relationship between current assets to total assets ratio and profitability measures has been found. The findings also reveals that current liabilities to total asset ratio affect positively and significantly return on asset, return on equity and operating profit margin.

WobshetMengesha (2014) analyzed Impact of Working Capital Management on Firms' Performance in Case of 11 Selected Metal Manufacturing Companies in Addis Ababa, Ethiopia from a period 2008-2012. Cash conversion period, Accounts receivable period, inventory conversion period and accounts payable period are used as independent variables, dependent variables are return on total assets, and return on investment and the control variables are firm size, firm growth and financial leverage. Finally the researcher conclude significant negative relation between inventory conversion period, account receivable period and account payable

period with profitability measure (ROA). That is lower cash conversion cycle that means shorter cash conversion cycle the profitability of firms is increased.

TesfayeAyele (2016) in the study working capital management on firm's profitability of a sample 25 manufacturing share companies in Addis Ababa, Ethiopia covering a period from 2010-2014. ROA is measure Profitability; Account receivable days (ARD), Inventory Holding Periods, Account Payable days (APD) and Cash Conversion Cycle (CCC) are used to measure working capital management and firm size, inflation and GDP ratio as control variable. Finally the finding of the study has shown that negative significant relation between cash conversion cycle and financial performance of manufacturing share companies.

Summary and Knowledge Gap

The literature using above empirical and it's also theoretical part study from different countries writing about the working capital management on firms' profitability.

Based on the different variables cash conversion cycle, account payables date, account receivable days (ARD), inventory holding periods (IHP), return on equity, return on asset, firm size, leverage, growth rate in the studies from different countries outside Ethiopia such as Kenya, Ghana, South Africa, Thailand, Tanzanian (Dares lame), Japan etc. The result cash conversion and financial performance is negatively significant relation Lazaridis and Tryfonidis (2006), Napompech.K (2012).

In case of Ethiopia there are few literatures like TewdrosDinberu (2013), WobshetMengesha (2014) & TesfayeAyele (2016) who try to identify the impact of working capital management on the performance of the firm? To identify this relationships those previous studies uses variables like cash conversion cycle, account receivables period, inventory conversion cycle, accounts payable period are used as independent variable.

2.4. Conceptual Framework

The conceptual framework depicts the Working Capital Management and financial Performance of Manufacturing Firms. The study considered Working Capital Management as independent variables, to determine how they affect the dependent variable that is profitability.

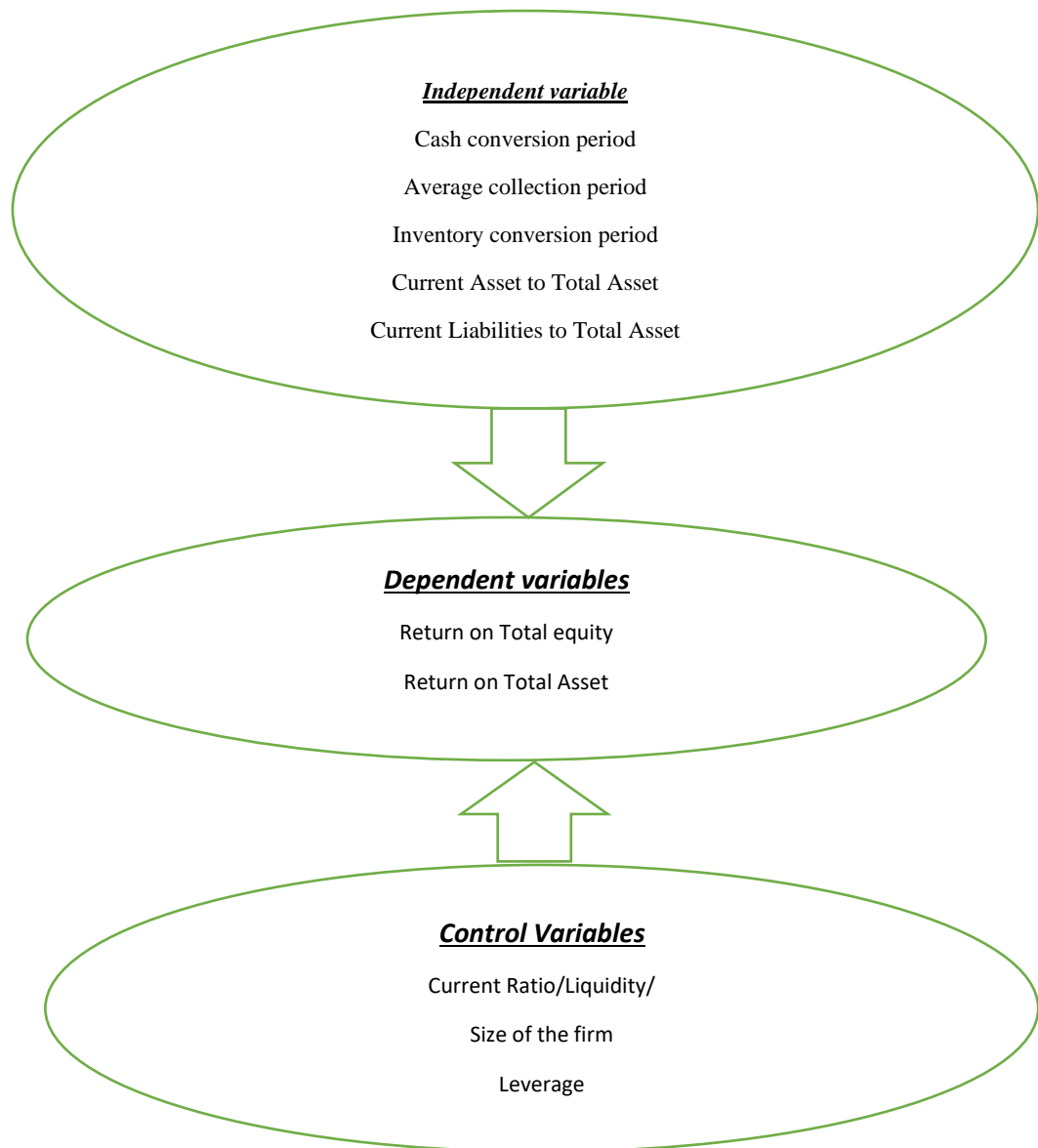


Figure 2.1 Conceptual framework of the study, Source: own construction from literature review.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

As this research intends to find out the cause and effect relationship between working capital management and performance, explanatory research type with quantitative approach is employed. It is a means of testing theories by examining the relationship among variables. The panel data that was collected was analyzed using pooled panel data analysis. Pooled panel data analysis is one that both intercepts and slopes are constant. In this panel data analysis the cross section firm data and time series data are pooled together in a single column assuming that there is no significant cross section or temporal effects (ignoring about the space and time dimension of the pooled data) (Gujarati, 2003).

3.2. Sources of Data

The researcher considers ten years because of limited number of firms having an operating life of more than ten years. Most of the required data was obtained from the financial statements submitted from Ethiopian Revenue Minster large Tax Payer Branch Office for income tax purpose. However, due to incompleteness of data obtained from the minster some firms are excluded from the sample.

3.3. Sample Design and Sampling Technique

The target population incorporates all large scale manufacturing firm in Ethiopia. Based on the data required for the purpose of analysis was obtained from secondary sources; financial statements including balance Sheet and Income Statement of sample companies for a period of 2008-2017. The researcher considers ten years, because of limited number of firms having an operating life of more than ten years. The required data was obtained from the financial statements submitted to the Ethiopian Revenue Minster large Tax Payer branch Office, for income tax purpose. Therefore, according to Minster there are 202 large scale manufacturing firms in Ethiopia and the sample consists of 61 manufacturing firms were selected because of data availability and incompleteness of data.

3.4. Model Specification

The equation to investigate the relationship between working capital management and profitability will be as follows: the researchers have been used the model that was employed by Alipour (2011). The **general model** is:-

$$Y_i = \beta_0 + \sum \beta_i X_i + e_i \quad (\text{Eq. 3.1})$$

Where:-

Y_i : observation of dependent variables (ROA and ROE)

β_0 : the intercept of equation;

β_i : represent the coefficient of explanatory and control variables

X_i : independent and control variables

e_i : represent error term

Specifically, the above Ordinary least square model is converted into specified variables it becomes:

$$ROA_i = \beta_0 + \beta_1 CCC_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.1})$$

$$ROE_i = \beta_0 + \beta_1 CCC_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.2})$$

$$ROA_i = \beta_0 + \beta_1 ACP_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.3})$$

$$ROE_i = \beta_0 + \beta_1 ACP_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.4})$$

$$ROA_i = \beta_0 + \beta_1 ICP_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.5})$$

$$ROE_i = \beta_0 + \beta_1 ICP_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.6})$$

$$ROA_i = \beta_0 + \beta_1 CATA_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.7})$$

$$ROE_i = \beta_0 + \beta_1 CATA_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.8})$$

$$ROA_i = \beta_0 + \beta_1 CLTA_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.9})$$

$$ROE_i = \beta_0 + \beta_1 CLTA_i + \beta_2 CACL_i + \beta_3 FIRM\ SIZE_i + \beta_4 TDTA \quad (\text{Eq. 3.10})$$

Where:

β_0 : the intercept of equation;

ROAi: the return on Asset of observation i

ROE i: the return on Equity of observation i

CCC i: cash conversion cycle of observation i

ACP i: average collection period of observation i

ICP i: inventory conversion period of observation i

CATA i: current asset to total asset of observation i

CLTL i: current liability to total liability of observation i

CACL i: current asset to current liability of observation i

FIRM SIZE i; natural logarithm of total asset of observation i

TDTA i: total debt to total asset of observation i

3.5. Data Analysis Technique

The analyses of data involve descriptive and panel data analysis which has been used to establish an empirical model which in turn establishes working capital management and financial performance of manufacturing firms in Ethiopia. Panel data have the dimensions of both time series and cross-section observations were to estimate regression analysis Brook (2014). E-views software Version 8s' and IBM SPSS (Statistical package for social science) Version 21 has been used for interpreting and analyzing of the financial data and the result. The relationship between working capital management and financial performance was expected to follow a regression model of nature at 95% significance level.

Description of Variables

In this study, the choice of Descriptive variables is based on alternative theories related to working capital management and financial performance and additional variables that were used in previous studies. The chosen variables include dependent, independent and some control variables.

Dependent Variables

Dependent Variables are variables used are to measure the profitability a firm performance. These are (ROA) return on asset and (ROE) return on equity.

Return on Asset (ROA):- is very important and provide a standard for changing how efficiently financial management employs the average amount which is invested in the firm's assets, whether the amount come from investor or creditors and the return on asset ratio calculates how efficiently profits are being collected from the assets employee (UIHassen, N., Muhammed, M., Amjad, M. &Hussain, M (2014). Return on asset is calculating net income before tax / total asset.

Return on equity (ROE):- The return on equity ratio calculates how efficiently profits are being collected from the assets employee. Kofi, A. R., Awunyo –Vito, D., &Lawer, A. P. (2013) uses formula of Return on Equity is Net profit/ Total Asset.

Independent Variables

Independence of random variables is a very important concept. If X and Y are independent, then knowing the outcome of X does not change the probability of the possible outcomes of Y and vice versa. The independent variable in this study is working capital management which was measured by the Cash conversion cycle (CCC), Average collection period (ACP), inventory conversion period (ICP), current Asset to Total Asset (CA_TA) and current Liabilities to Total Asset (CL_TA) were used.

Cash conversion cycle (CCC)

The cash conversion cycle (CCC) is the length of time between the firm's actual cash expenditures to pay for productive resources (materials and labor) and its own cash receipts from the sale of products (that is, the length of time between paying for labor and materials and collecting on receivables). It is calculated as; (Average Collection Period + Inventory turnover in days - Average Payment Period)

Ponsian, N., Khrispina, K., Tago, G., and Mkiibi, H. (2014) cash conversion cycle can be shortened in three ways: One, by reducing inventory conversion period by processing and selling goods more quickly, two by reducing receivables period by speeding up collections from sales and three by lengthening payables or deferral period through slowing down firm's own payments.

Average collection period (ACP):- is the average length of time required to convert the firm's receivables into cash—that is, to collect cash following a sale. It is measured [(account receivable/sales) *365].

Inventory conversion period (ICP):- would be the time required to convert raw materials into finished goods and then to sell those goods. It is measured [(Inventory/cost of goods sold) *365 days].

Current Asset to Total Asset: - is measured the ratio of current asset to total asset.

Current Liabilities to Total Asset: - is measured the ratio of current liabilities to total asset.

Control Variables

One of the variables that influence the firms' profitability is control variables such as firm size, leverage and liquidity.

Firm size is measured by the natural logarithm of net sales or total assets. Large firms tend to improve their bargaining ability using size as a chip and enjoy various preferential supply policies to achieve economies of scale (Chuan-guo Li, Hui-min Dong, Shou Chen, and Yan Yang (2014)).

Leverage is measured by debt ratio, equity ratio, and debt to equity ratio. This study used debt to equity ratio as a measure of leverage.

Liquidity or Current Ratio is measured the ratio of current assets to current liabilities within one year. Liquidity or short term solvency means ability of the business to pay its short term liabilities, the current ratio is one of the best known measures of financial strength and it's measured by the ratio of current asset to current liabilities (Jaipur National University (2013)).

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1. Introduction

This chapter presents working capital management & the factors that affect financial performance of manufacturing firms in Ethiopia. The study selected Return on investment Asset (ROA) and Return on Equity (ROE) as measure of the firm's financial performance. On the other hand cash conversion cycle (CCC), inventory conversion period (ICP), average collection period (ACP) Current Asset to Total Asset (CA/TA) and Current Liabilities to Total Asset (CL/TA) are independent variable and Current Ratio/Liquidity/, Size of the firm and Leverage as control variable. The Empirical results from quantitative data analysis using E-views software Version 8s' & SPSS statistics 21 as well as presenting results from descriptive statistics, correlation matrix and regression results are the study main statistical tool.

4.2. Descriptive Analysis

Table 4.1 : Descriptive Statistics for the study Variables										
	ROA	ROE	CCC	ACP	ICP	CA_ TA	CL_ TA	CA_ CL	FIRM _SIZE	TD_ TA
Mean	0.18	0.13	100.99	13.90	105.53	0.67	0.39	2.01	19.08	0.58
Median	0.19	0.14	88.91	9.18	99.60	0.65	0.37	1.80	19.19	0.53
Maximum	0.26	0.18	183.28	45.19	192.45	1.01	0.75	3.86	20.05	0.95
Minimum	0.08	0.07	58.98	2.85	45.11	0.30	0.15	0.75	17.70	0.29
Std. Dev.	0.06	0.04	37.65	14.57	40.76	0.19	0.19	0.87	0.68	0.19
Observation	610	610	610	610	610	610	610	610	610	610
Source: E views 8 data summary statistics result based on annual reports of sample firms for the study period-2008-2017.										

Source: E-Views v.8 output

Table 4.1 presents the descriptive study of the sample firms mean, median maximum, minimum, standard deviation and total observations come to 61*10 = 610 from the period of 2008 to 2017the study variables. The study uses ten variables that are two dependent, five independent and three control variables are uses.

Table 4.1 shows the average value sample firms of return on asset is 18 percent of total assets the median is 19 percent. Standard deviation is 6 percent this means the value of profitability can deviate from the mean to both sides by 6 percent. The minimum values of return on asset is 8 percent and the maximum is 26 percent while the average value of return on equity is 13 percent of total assets and the median is 14 percent. The standard deviation is 4 percent this means that the value of return can deviate from the mean to both sides by 4 percent, the maximum and minimum values of return on equity are 18 percent and 7 percent respectively.

Firm size is measure by natural logarithm of total asset, the average value of the size of the firm is value of log of total asset is 19, and the median value of log of total asset is 19 percent and the standard deviation 0.7. The maximum value of firm size value of log of total asset is 20 while the minimum is 17.7. The large firm size is advantages from the smallest ones because of economies of scale, in the sample manufacturing firms average, maximum and minimum of the size of the firm is very close relationships, so based on the sample of manufacturing firm in Ethiopia is almost nearest amount of total assets invested.

Other control variables of the sample manufacturing firm is leverage (TD/TA) the average value is 58 percent, 53 percent is the median and the standard deviation is 19 percent. The maximum value is 95 percent and the minimum values is 29 percent. Firms in the sample uses at average 58 percent debt relation to total asset this means from the total asset 58 percent is debt the rest 42 percent is total asset and the maximum debt 95 percent from total asset it is more risk. This means 58 percent of an average the sample manufacturing firms in Ethiopia is highly leverage.

Other control variables are liquidity or Current Ratio (CA_CL) the average value is 2.0 the median is 1.8 and the standard deviation 0.87. The average current asset to current liability is 2.0 this means to settle 1 birr of current liability the sample manufacturing firms pays two birr, the maximum value of CA_CL is 3.86 this indicate for one birr of current liabilities the sample manufacturing firms pays 3.86 birr. The minimum value of current ratio (CA-CL) is 0.75.

The average time of cash conversion cycle was 101 days and the median of cash conversion cycle is 89 days. The maximum time for convert cash conversion cycle from raw material purchase then to finished goods then to sales (account receivables) then account receivables convert to cash overall activities is 183 days where as the minimum time is 59 days. The

standard deviation is 38 days this means that the value of cash conversion cycle can deviate from the mean to both sides by 38 days.

The inventory conversion period is used to measure a firm's liquidity or activity, the average inventory conversion period was 105 days (the median 192 days) this means firms in the sample need 105 days (3 months plus 15 days) to sell the inventory it is a long period moreover the standard deviation is 41 days. The maximum inventory conversion period is 192 days and the minimum is 45 days.

The average collection period is used for evaluating collection and credit policy. The average collection period in the sample was 14 days (the median 9 days) this means firms collect their money in 14 days, the maximum average collection period is 45 days and the minimum is 3 days the standard deviation is 16 days. The sample manufacturing firms' collection of their money is a very short period of time and their credit policy is tight.

The average of current asset to total asset is 66.7 percent this means the amount of invested 66.7 percent from the total asset is current asset. The median 65 percent and the standard deviation is 19 percent. The maximum current asset to total asset of the sample is 100 percent and the minimum 30 percent this indicates manufacturing firms in the sample use a relaxed working capital policy. A relaxed working capital policy uses a high level of current asset and a low level of fixed asset.

The average of current liabilities to total asset is 39 percent (the median 38 percent) the standard deviation 19 percent. The maximum amount of current liabilities to total asset 75 percent and minimum is 15 percent. The average of current liabilities to total asset in the sample manufacturing firms is an average from the total asset 39 percent is current liability.

4.3. Correlation Analysis

Correlations are often useful for their predictive ability. Data are collected about two or more characteristics on the same subjects or populations. The data are paired for Each subject; if enough studies have been done or a big enough sample size has been used, strong correlations may indicate a regular relationship that usually allows prediction (within a range) of a person's score on one variable based on a score on another variable. This means there is predictability about how these variables work together. In order to check the presence of multi collinearity in the data Variance Inflation Factor (VIF) statistics are analyzed.

4.3.1. Correlation Analysis of Cash conversion cycle, Average collection period, Inventory conversion period, Current Asset- Total Asset and Current Liability- Total Asset.

Table 4.2 shows the relationships of financial performance of manufacturing firms with cash conversion cycle, Average collection period, Inventory conversion period, Current asset- Total Asset and Current liability- Total Asset. The correlation coefficient of cash conversion cycle with return on asset and return on equity is -0.110 and -0.114 respectively it is weakly correlated. The negative relationships between CCC & ROA is consistence with (Mogaka, D.M., &Jagongo, A. 2013).The p –value indicates 0.01 (1 percent) statistically significant relationships, in the hypothesis (H01) there is no significant relationships between cash conversion cycle and financial performance measures but table 4.2 depicts there is negative significant relationships between cash conversion cycle and financial performance (ROA and ROE) so reject the null hypothesis and accept the alternative hypothesis.

Association of average collection period and the financial performance (return on asset and return on equity) of table 4.2 shows person's correlation coefficient is -0.064 and -0.064 respectively, the correlation coefficient are weakly correlated and the p value is (0.114 and 0.113) for return on asset and return on equity is respectively this means there is negative and no statistically significant relationships. In first chapter hypothesis (H02) there is no significant relationship between average collection period (ACP) and financial performance measures (ROA &ROE), the result of table 4.2 ACP no statistically significant relationships with financial performance measure (ROA & ROE); so reject the hypothesis (H02).

relationships between financial performance (return on asset and return on equity) with inventory conversion period the correlation coefficient is -0.096 and -0.099 respectively and decrease

inventory conversion period leads increase profitability in addition to that the p value is 0.05 (5 percent) it is statically significance. The hypothesized (H03) there is no significant relationship between inventory conversion period (ICP) and financial performance measures (ROA &ROE). The result of correlation analysis negatively statistically significance relationships between Inventory conversion period with return on Asset and return on equity. Finally reject the research hypothesis (H03) and accept the alternative hypothesis.

		ROA	ROE	CCC	ACP	ICP	CATA	CLTA
ROA	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	610						
ROE	Pearson Correlation	.999**	1					
	Sig. (2-tailed)	0.000						
	N	610	610					
CCC	Pearson Correlation	-.110**	-.114**	1				
	Sig. (2-tailed)	.007	.005					
	N	610	610	610				
ACP	Pearson Correlation	-.064	-.064	.430**	1			
	Sig. (2-tailed)	.114	.113	.000				
	N	610	610	610	610			
ICP	Pearson Correlation	-.096*	-.099*	.895**	.139**	1		
	Sig. (2-tailed)	.018	.014	.000	.001			
	N	610	610	610	610	610		
CATA	Pearson Correlation	.230**	.245**	.039	.035	.047	1	
	Sig. (2-tailed)	.000	.000	.338	.391	.242		
	N	610	610	610	610	610	610	
CLTA	Pearson Correlation	.180**	.188**	-.036	.003	-.002	.508**	1
	Sig. (2-tailed)	.000	.000	.372	.947	.967	.000	
	N	610	610	610	610	610	610	610

** . Correlation is significant at the 0.01 level (2-tailed).

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

Source: 2008-2017 Survey Data, SPSS Output.

The other hypothesis that was stated in hypothesis (H04) there are no significant relationships between current asset to total asset and financial performance (ROA & ROE). Table 4.2 indicates the ratio of current asset to total asset correlated to return on asset and return on equity the correlation coefficient is positive in addition the p value is 0.01(1 percent) this means the ratioof current asset to total asset positively highly statistically significant relationships. According to the result reject the null hypothesis (H04) and accept the alternative hypothesis this

means there is positive significant relationships between current asset to total asset and financial performance.

Table 4.2 depicts the relationships between ratio of current liabilities to total asset with return on equity and return on asset is 0.180 and 0.188 respectively. Both coefficient shows positively correlated, the ratio of current liabilities to total asset with financial performance and the significant value (the p value) is 0.01 highly statistically significant. In the first chapter hypothesize (H05) there is a positive relationships between current liabilities to total assets , the correlation tables shows there is positive correlation coefficient and statistically significant so accept the null hypothesis (H05).

The association of correlation coefficient of cash conversion cycle with average collection period is 89.5 percent or 0.895. It is high correlated between the two independent variable, so we check a multi collinearity test using variance inflation factor.

4.3.2. Correlation analysis of current-asset to current liability (liquidity), firm size and total debt to total asset (leverage) with return on asset & return on equity.

Table 4.3 shows the association between current asset to current liability (liquidity) with return on asset -0.13 and with return on equity is -0.12 it is weakly correlated and the p value is not statistically significant. The relationships current assets to current liability with firm size -0.198 and statistically significant; with leverage (TDTA) -0.015.

The relationship of firm size with return on asset -0.299 and with return on equity is -0.306 the p value shows the association is significantly correlated with the sample manufacturing firms. Firm size is negative correlation (-0.198) with current asset to current liability (liquidity) and the association is statistically significantly, with total debt to total asset is -0.265 and highly statistically significance with firm size.

The association of total debt to total asset (leverage) with return on asset is 0.942 and with return on equity is 0.937 statistically significance, the relationships of leverage (TDTA) with liquidity (CACL) is negative correlated and with firm size negative correlation but statistically significance.

Table 4.3 Correlation analysis of current asset to current liabilities, firm size and total debt to total asset with return on asset and return on equity.

		ROA	ROE	CACL	FIRMSIZE	TDTA
ROA	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	610				
ROE	Pearson Correlation	.999**	1			
	Sig. (2-tailed)	0.000				
	N	610	610			
CACL	Pearson Correlation	-.013	-.012	1		
	Sig. (2-tailed)	.743	.768			
	N	610	610	610		
FIRMSIZE	Pearson Correlation	-.299**	-.306**	-.198**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	610	610	610	610	
TDTA	Pearson Correlation	.942**	.937**	-.015	-.265**	1
	Sig. (2-tailed)	.000	.000	.718	.000	
	N	610	610	610	610	610

** . Correlation is significant at the 0.01 level (2-tailed).

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

Source: SPSS 21 output from 2008-2017.

4.3.3. Multi Collinearity problem

Generally accepted that the variance inflation factor (VIF) of more than 10 will lead to multi-collinearity problem. Table 4.4 the VIF test run on the independent variables showed that the highest VIF was 9.84 for cash conversion cycle and 8.23 for inventory conversion period.

Table 4.4 Variance inflation factor

Coefficients^a

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
CCC	.102	9.839
ACP	.499	2.004
ICP	.121	8.234
CATA	.641	1.561
CLTA	.667	1.499
CACL	.924	1.082
FIRMSIZE	.756	1.323
TDTA	.863	1.159

a. Dependent Variable: ROA,ROE

The above correlation and VIF values suggest that there is a no multi collinearity problem between the two independent variables; hence those variables fitted into single regression model.

4.4. Regression Analysis

Regression is concerned with describing and evaluating the relationship between a given variable and one or more other variables. More specifically, regression is an attempt to explain movements in a variable by reference to movements in one or more other variables. In order to check the autocorrelation Durbin Watson (D-W) statistics is analyzed. $0 \leq DW \leq 4$ if $DW = 2$ this is the case where there is no autocorrelation if $DW = 0$ this corresponds to the case where there is perfect positive autocorrelation, if $DW = 4$ this corresponds to the case where there is perfect negative auto correlation (Brooks, C. 2014). Other authors (Makridakis & Wheelwright, 1978) consider D-W value between 1.5 and 2.5 as acceptable level indicating no presence of collinearity. Summary of Durbin –Watson test of the all regression model the highest DW test is 1.2 and the lowest DW test is 0.98.

4.4.1. Cash conversion cycle and financial performance.

Table 4.5 shows the regression analysis between cash conversion cycle and financial performance (return on asset and return on equity). The coefficient of Cash conversion cycle is negative and significant p value (less than 1 percent) result both for return on asset and return on equity. This means cash conversion cycle is negative significant relationships with return on asset and return on equity. Cash conversion cycle has negative relationships with financial performance means shorter cash conversion cycle there is enough liquidity in the hands of the firm (short payables date) and there is no external financing needs so increase profitability. Regression coefficient of -0.071 implies that a one unit increase in cash conversion cycle leads to a -0.071 decrease in ROA and also -0.075 implies that one unit increase in cash conversion cycle leads to -0.075 decrease in ROE.

In the first chapter hypothesis (H01) is there is no significant relationship between cash conversion cycle (CCC) and financial performance measures but the result of regression analysis table 4.5 depicts cash conversion cycle is negative and highly significant relationships with return on asset and return on equity. Based on the regression analysis result reject the null hypothesis. This result is conforms to (Muhammad, H., Ashfaq, U., & Waqas, M. (2016) which also finds a significant negative relationships between CCC and ROA. The finding of the result

of the study is the same as to (Ibrahim, Y., Mohammed, A., & Abdul-Aziz, F. (2017) a significant negative relationships between CCC and ROA.

The regression result of Current asset to current liability is negative and the p value indicates doesn't affect the return on asset and return on equity. The firm size is negatively affects both return on asset and return on equity and the significance at 1 percent respectively. The ratio of total debt to total asset is positively affects return on asset and return on equity and significantly at 1 percent.

Table 4.5: Regression analysis of Cash conversion cycle and financial performance.

	Return on asset		Return on Equity	
	Coefficient	t-stastics	Coefficient	t-stastics
	standard error	P-value	standard error	P-value
Constant	0.682	3.723	0.581	4.328
	0.183	0.000	0.134	0.000
cash conversion cycle	-0.071	-5.390	-0.075	-5.431
	0.000	0.000	0.000	0.000
Current asset to current liability	-0.006	-0.412	-0.006	-0.432
	0.001	0.680	0.001	0.666
Firm size	-0.048	-3.444	-0.058	-3.968
	0.010	0.001	0.007	0.000
Total debt to total asset	0.927	67.705	0.919	64.555
	0.006	0.000	0.004	0.000
R -square	0.895		0.887	
Adjusted R Square	0.895		0.886	
Observation	610.000		610.000	
F	1291.988		1183.760	
Significance F	0.000		0.000	
Durbin-Watson	1.16		1.15	

Source: 2008-2017 Survey Data, SPSS Output

The R square is 89.5 percent for return on asset and for return on equity is 88.7 percent moreover adjusted R square is 89.5 percent and 88.6 percent return on asset and return on equity

respectively, this means 89.5 percent of the dependent variable (return on asset) is explained in the model the rest 10.5 percent is unexplained in the model. 88.7 percent change in return on equity is successfully explained by the independent variables (CCC, CA CL, FIRM SIZE & TDTA) the model and the rest 11.4 percent is caused by other factors that is not include in this model. Durban Watson for return on asset 1.16 and for return on equity 1.15.

4.4.2. Average collection period and financial performance.

Table 4.6 depicts the regression analysis of average collection period with return on asset and return on equity. The relationship between ACP with ROA is negatively significant effect is observe and ACP with ROE it is also the same result for ROA. Negative coefficient ACP indicates short period of time to convert account receivables to cash of the sample manufacturing firms. In the hypothesized (H02) section of this research there is no significant relationship between average collection period and financial performance measures (return on asset and return on equity) but the result of average collection period with return on asset and return on equity is negative and significant relationships. Based on the regression analysis result reject the null hypothesis. The result of this research the same with (Ibrahim, Y., Mohammed, A., & Abdul-Aziz, F. (2017) average collection period (ACP) has a negative but significant relationship with firm performance (ROA).

The relationships between the ratio of Current asset to total asset and the financial performance measurement (the return on asset and return on equity) is negative relationships respectively moreover the result (the p-value) of return on asset and return on equity it is not significantly affect the model. Table 4.6 shows firms size affect both return on asset and return on equity negatively and there is a significant relationships. Relationships between the ratio of total debt to total asset with financial performance (the return on equity and return on asset) are positive and statistically significantly affect at 1 percent.

The R square of return on asset and return on equity are 89.2 percent and 88.3 percent respectively mean while the adjusted R square return on asset is 89.1 percent this means 89.1 percent of the variables explained in the model the rest 10.9 is explained by other variables which is outside the model and adjusted R square of return on equity is 88.2 percent this means 88.2 percent of the explanatory variable is explained in the model and the rest 11.8 percent is

unexplained (outside) in the model. The significance of the model is measure on F statistics, return on asset and return on equity is 1 percent level of significance it is acceptable so the model is acceptable and fit. Durban Watson for return on asset 1.14 and for return on equity 1.22.

Table 4.6: Regression analysis of average Collection period and financial performance.

	Return on asset		Return on Equity	
	Coefficient	t-stastics	Coefficient	t-stastics
	standard error	P-value	standard error	P-value
Constant	0.654	3.504	0.563	4.107
	0.187	0.000	0.137	0.000
ACP	-0.042	-3.102	-0.041	-2.934
	0.00	0.002	-	0.003
CA CL	-0.006	-0.443	-0.007	-0.482
	0.001	0.658	0.001	0.630
FIRM SIZE	-0.05	-3.479	-0.06	-4.011
	0.01	0.001	0.007	0.000
TD TA	0.928	66.762	0.92	63.583
	0.006	0.000	0.004	0.000
R -square	0.892		0.883	
Adjusted R Square	0.891		0.882	
Observation	610		610	
F	1247.757		1139.807	
Significance F	0.00		0.00	
Durbin-Watson	1.136		1.122	

Source: 2008-2017 Survey Data, SPSS Output

4.4.3. Inventory conversion period and financial performance

The regression analysis of inventory conversion period (ICP) with return on asset (ROA) is negative coefficient and the p-value indicates ($p < 0.001$), the result is negatively significant relationships between ICP and ROE. Inventory conversion period with return on equity the result shows there is negatively statistically significant relationships occurs. As the hypothesis (H03) section on the research there is no significance relationships between inventory conversion period and financial performance (return on equity and return on asset) but the result of regression analysis of inventory conversion period with financial performance measure (ROA & ROE) are negatively significant relationships so reject the null hypothesis.

The other variable in the regression table 4.7 is the ratio of current asset to current liabilities with return on asset and return on equity is negative respectively and the p value indicates as there is no significant relationship. The regression result of firm size with financial performance (return on asset and return on equity) is negative coefficient and the p value is statistically significant. Ratio of total debt to total asset (leverage) with return on asset and equity are positive and highly significant relationship (p value=0.000).

Table 4.7: Regression analysis of Inventory Conversion period and financial performance.

	Return on Asset		Return on Equity	
	Coefficient	t-stastics	Coefficient	t-stastics
	standard error	P-value	standard error	P-value
Constant	0.671	3.647	0.573	4.249
	0.184	0.000	0.135	0.000
ICP	-0.065	-4.925	-0.068	-4.955
	-	0.000	0.000	0.000
CA CL	-0.01	-0.741	-0.011	-0.763
	0.001	0.459	0.001	0.446
FIRM SIZE	-0.048	-3.424	-0.058	-3.946
	0.01	0.001	0.007	0.000
TD TA	0.927	67.510	0.919	64.364
	0.006	0.000	0.004	0.000
R -square	0.894		0.886	
Adjusted R Square	0.894		0.885	
Observation	610		610	
F	1281.058		1173.357	
Significance F	0.00		0.00	
Durbin-Watson	1.139		1.134	

Source: 2008-2017 Survey Data, SPSS Output

The R-square is 89.4 percent for return on asset and 88.6 percent for return on equity, the adjusted R square 89.4 percent for return on asset this means 89.4 percent the variation in the profitability is explained in the model the rest 10.6 percent is not explained by the model that is outside the model is explained. The adjusted R square of return on equity is 88.5 percent and the unexplained part is 11.5 percent. The F statistics are significantly so this is best fit for the model. Durban Watson for return on asset 1.139 and for return on equity 1.134.

4.4.4. Current asset to total asset and financial Performance.

Table 4.8 shows the regression result of current asset to current liabilities (liquidity) and profitability (return on asset and return on equity) the coefficients are positive value 0.064 and 0.078 respectively.

Table 4.8: Regression analysis of Current asset to current liability& financial performance.

	Return on asset		Return on Equity	
	Coefficient	t-stastics	Coefficient	t-stastics
	standard error	P-value	standard error	P-value
Constant	0.364	1.828	0.303	2.091
	0.199	0.068	0.145	0.037
CA TA	0.064	4.516	0.078	5.371
	0.024	0.000	0.017	0.000
CA CL	-0.008	-0.618	-0.009	-0.614
	0.001	0.537	0.001	0.540
FIRM SIZE	0.010	-2.402	-0.041	-2.678
	-0.035	0.017	0.007	0.008
TD TA	0.006	66.652	0.913	63.868
	0.922	0.000	0.004	0.000
R -square	0.894		0.887	
Adjusted R Square	0.893		0.886	
Observation	610.000		610.000	
F	1272.268		1182.393	
Significance F	0.000		0.000	
Durbin-Watson	1.168		1.161	

The significance level or p value (P=0.000) of return on asset and return on equity indicates highly statistically significant relationships, in hypothesis (H04) there is no significant relationships between current assets to total asset and financial performance measure (return on asset and return on equity) but the result is positive significant relationships between current asset to total asset and financial performance (ROA & ROE). Based on the of table 4.8 results; reject the null hypothesis.

The ratio of current asset to current liabilities with return on asset and return on equity the regression coefficient is negative and the p value is bad.

Firm size is measured the natural logarithm of total asset in regression analysis it is a negative relationships with return on asset and return on equity in addition to significance at 1 percent. The relationships between total debt to total asset with financial performance (return on asset and return on equity) is positive and the significance level ($p=0.000$) this means positive and highly significant.

R square provides an estimation of the strength of the relationships between your model and the response variable so table 4.8 depicts R square is 89.4 percent for return on asset and 88.7 percent for return on equity. The adjusted R square of the two regression model are 89.3 and 88.6 percent for return on asset and return on equity. These means 89.3 percent of the independent variable (ratio of current asset to current liabilities) is explained in the model and the rest 10.7 is explained outside of the model. 88.6 percent of the independent variable (return on equity) is explained by in this model, 11.4 percent caused by other factors that are not included in these models.

The F statistics shows 1,272 for return on asset and 1,182 for return on equity and the p value is highly significance ($p=0.000$) and the models is fit. Durban Watson for return on asset 1.168 and for return on equity 1.161.

4.4.5. Current liabilities to total asset and financial performance.

The regression analysis table 4.9 shows the independent variable of current liabilities to total assets with financial performance (return on asset and return on equity) the coefficient is -5.495 and -4.47 respectively this means negative relationships and the p value is significant table 4.9 depicts there is negative relationships current liabilities to total asset with return on asset and return on equity. In the hypothesis (H_0) there is a significant positive relationship between the ratio of current liabilities to total asset and financial performance (ROA & ROE), the result of regression analysis shows there is a negative significance relationships between return on asset and return on equity based on the result reject null hypothesis.

Current asset to current liabilities has negative relationships with financial performance measurement (return on asset and return on equity) and bad significant effect while firm size is negative and highly significant ($p=0.000$) affect return on asset and return on equity in addition to that the ratio of total debt to total asset is positive and highly significant affect on the financial performance (return on asset and return on equity).

Table 4.9: Regression analysis of current liabilities to total asset& financial performance.

	Return on Asset		Return on Equity	
	Coefficient	t-stastics	Coefficient	t-stastics
	standard error	P-value	standard error	P-value
Constant	0.746	4.07	0.622	4.593
	0.183	0.000	0.135	0.000
CL TA	-0.076	-5.495	-0.065	-4.476
	0.022	0.000	0.016	0.000
CA CL	-0.02	-1.471	-0.019	-1.359
	0.001	0.142	0.001	0.175
FIRM SIZE	-0.056	-3.989	-0.065	-4.473
	0.01	0.000	0.007	0.000
TD TA	0.947	67.014	0.936	63.182
	0.006	0.000	0.005	0.000
R -square	0.895		0.885	
Adjusted R Square	0.895		0.884	
Observation	610		610	
F	1294.569		1163.856	
Significance F	0.00		0.00	
Durbin-Watson	0.983		1.002	

Source: 2008-2017 Survey Data, SPSS Output

The R square is 89.5 percent for return on asset and 88.5 percent for return on equity, the adjusted R square 89.5 percent and 88.4 percent respectively; this means the variation of the dependent variable (return on asset & return on equity) are explained by the independent variables of the model. The variation in the dependent variables (10.5 percent for return on asset and 11.6 percent of return on equity) are unexplained by the independent variables of the model. Table 4.9 depicts that the F statistics are 1,294.57 and 1,163.86 with significance (F 0.0000), this means the model is fit at 1 percent significance level. Durban Watson for return on asset 0.983 and for return on equity 1.002.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Manufacturing sector in Ethiopia are major economic activities of the country and high contribution to GDP growth. This research is conducted working capital management and financial performance manufacturing firms is looks. Data was analyzed quantitative using Pearson's correlation and OLS regression analysis.

5.1. Summary

Sufficient working capital is important for manufacturing firms. Working capital management is managing the working capital of firms; when you manage working capital the financial performance sufficiently increase for the profitability of an organization. Financial performance is determined by return on asset and return on equity. Five variables including cash conversion cycle, average inventory period, inventory conversion period, current ratio to total asset and current liabilities to total asset. Current asset to total asset, firm size and total debt to total asset are control variables. Data is collected from 61 manufacturing firm, from 2008-2017 for ten years.

Previous researcher conducted the relation between working capital management and profitability of a manufacturing firm is negative and a statically significant relationship is observed. The importance of this research to know to what extent working capital management affects manufacturing firms in Ethiopia. The variable use for this research are cash conversion cycle, average collection period, inventory conversion period, current asset to total asset and current liabilities to total liabilities as independent variable. Control variables are firm size, current asset to current liabilities and total debt to total asset and the dependent variable is return on asset and return on equity. The period of the research from 2008-2017 for 61 manufacturing firms, the chosen sample is based on the availability of complete data from Ethiopian Revenue Custom Authority Branch Office.

The finding of descriptive analysis shows the profitability of manufacturing firms is measured by average return on asset and return on equity the result 18 percent and is 13 percent respectively, this means 18 percent and 13 percent the total asset is contribute to profitability of the sample

manufacturing firms. The average of cash conversion cycle is 101 days (1/4 budget year) of the sample manufacturing firms it is use long period to convert inventory to receivables and convert to cash. Average collection period of the sample manufacturing firms is approximately 14 days it is short period of time, it is important to reduce liquidity problem moreover average collection period is short period to settle receivables then profitability of manufacturing firms increase. Average inventory conversion period approximately 105 days it is long time to convert raw material to finished goods to sell. The finding of reveal that ratio of current asset to total asset 67 percent this means from the portion of total asset on average 67 percent is current asset the rest 33 percent is fixed asset. The sample manufacturing firms invest from total asset 67 percent for current asset which may negative effect on profitability. On average the ratio of current liabilities to total asset 39 percent.

From the correlation analysis, the correlation coefficient of cash conversion cycle with return on asset and return on equity is statistically significant negative relationships; the regression analysis of cash conversion cycle is negative highly significant relationships with financial performance (return on asset and return on equity). Negative (decrease) cash conversion cycle is leads to profitable of manufacturing firms the sample manufacturing firms is short cash conversion cycle. So the sample manufacturing firms of cash conversion cycle is statistically significant negative relationships.

The correlation analysis between average collection periods with financial performance measure (return on asset and return on equity) negative correlation coefficient and no statistically significantly affect. Similarly, the regression analysis of the relationships between average collection periods with return on asset and return on equity is negative coefficient, statistically significant effect.

The correlation analysis of inventory conversion period the result is inventory conversion period is negative significant relationships with financial performance (return on asset & return on equity) and the regression result of inventory conversion period is negatively significant relationships with financial performance measure (return on asset & return on equity). The regression and correlation analysis of inventory conversion with financial performance (return on asset and return on equity) the result is negative statistically significant relationships.

The result of regression analysis of current asset to total asset and profitability (return on asset and return on equity) is positive highly statistical significance relationships, similarly the correlation analysis of current asset to total asset with return on asset and return on equity the result is highly positively statistical significance relationships. Based on the two econometrics measurements the result is highly positively statistically significance relationships. It shows conservative position this means the total asset is comes from financed by current asset.

Finally the correlation analysis of current liabilities to total asset with return on equity and return on asset is positively statically significantly relationships; the result of regression analysis of current liabilities to total assets is negatively statistically significant relationships. All F-statistics value that are regression analysis from Table 4.5 to 4.9, the F-statistics are positive coefficient and highly statistically ($p = 0.00$) significance relationships.

5.2. Conclusions

The result of this research concludes that cash conversion cycle and inventory conversion period is negative statistically significant relationships with return on asset and return on equity but current asset to total asset is positively statistically significance relationships with return on asset and return on equity. Average collection period is negative correlation and no statistically significant relationships with financial performance but the ratio of current liability to total asset is positive correlation and statistically significance relationships with financial performance. On the other hand, the regression analysis of average collection period and the ratio of current liabilities to total asset is negatively statistically significance relationships with financial performance. The model is highly statistically significance fit at 1 percent at all regression analysis. The study concludes that the sample manufacturing firms decreasing cash conversion cycle and inventory conversion period that increase profitability of firms.

5.3. Recommendations

The recommendations of the research the study findings as follows:

- The cash conversion cycle of the sample manufacturing firms is a negative statistically relationships with financial performance (return on asset and return on equity). Negative means short period of cash conversion cycle this leads to increase profitability of firms,

so the study recommend that the financial manager of the sample manufacturing firms should caution to control this cycle to continue the operation of the firms with this trend.

- Average collection period of the sample manufacturing firms is negative association this means (short term credit policy) short conversion days from account receivable to cash, in the short term profitability is increased but in the long term unknowns. The study recommends that longer term credit period policy is advantageous to gain (realize) higher profit.
- Inventory conversion period is negatively statistical significance relationships with return on asset and return on equity. Inventory conversion period is begin from raw material then convert to finished goods and then to sell those goods, shorter period of Inventory conversion period is important to maximize profitability. When a time of a good season short period of inventory conversion period is chosen because it gets a high profit. When the economy is slow down and suddenly happens decrease in sales, there is high levels of inventory in stock is hold this leads to high carrying cost and handling charge. Finally the study recommends that average inventory conversion period is useful for the sample manufacturing firms.

5.4. Limitation of the study

The analysis of this research is secondary data; the data comes from Ethiopian Revenue and Customs authority. The sample manufacturing firms reporting financial information (balance sheet and income statement) for income tax purpose. Some firms report fictions (under reporting sales and exaggerate expense) information to decrease tax paid, based on this reason some information is misleading (data problem) on this research. To address this problem other researchers study the relationships between working capital management and financial performance first it uses auditable financial information (Balance sheet and income statement) second the studies based on the use of longtime series data (>10 years) and increased number of observations (sample companies) and increase variables are to gain more insights.

Finally the result of the study based on the assumption carried out to ensure the data fit with the basic assumptions of CLRM.

- Auto correlation is test using Durbin Watson (D-W) the result indicates nearest to no auto correlation.

- Multi collinearity test is applied, the collinearity of the independent variables is greater than 10 is highly correlated but in the sample there is high correlated variable is less than ten (10) so there is no problem of multi collinearity.

References

- Afza, T., & Sajib, M. N. (2007). Is it better to be Aggressive or Conservative in Managing Working Capital? *Journal of Quality and Technology Management* Volume III, Issue II Pages: 1816-2185.
- Ali, A., & Atif, A. (2012). Working Capital Management: Is It Really Affects the Profitability? Evidence from Pakistan. *Global Journal of Management and Business Research* Vol. 12 (17), pages: 75-78.
- Alipour, M. (2011). Working Capital Management and Corporate Profitability: Evidence from Iran. *World Applied Sciences Journal* Vol.12 (7), pages: 1093-1099.
- Aloy, J. (2012). Working Capital Management & Financial Performance of Manufacturing Sector in Sri Lanka. *European Journal of Business and Management*. Vol. 4(15), pages: 23-30.
- Audax, A. (2018). Factors Affecting Financial Performance of Manufacturing firms listed in Nairobi Securities Exchange Kenya. Unpublished Master thesis of United States International University Africa.
- Baghiyan, F. (2013). The Impact of Working Capital Management on Management Performance. *Journal of Behavioral Economics, Finance, Entrepreneurship, Accounting and Transport*. Vol.1(1). Pages: 13-14.
- Boating, K. & Peprah, G. (2018). Does Working Capital Management Affect Profitability of Ghanaian Manufacturing Firms? Sunyani Technical University, Available at online at <https://mpra.ub.uni-muenchen.de/90183/>
- Brigham, E. & Ehrhardt, M. (2011). Financial management: theory & practice, Cengage learning
- Brooks, C. (2014). Introductory Econometrics for Finance, Third edition, published in the United States of America by Cambridge University Press, New York.
- Chuan-guo Li, Hui-min Dong, Shou Chen, and Yan Yang (2014). "Working Capital Management, Corporate Performance, and Strategic Choices of the Wholesale and Retail

Industry in China” *Hindawi Publishing Corporation Scientific World Journal* Vol. (1), pages: 1-15.

Gill, A., Biger, N., & Mathur, N. (2010). “The Relationship between working capital management and profitability: evidence from the United States”. *Business and Economics Journal*, Vol. (10): pages: 1-9.

Ibrahim, Y.N., Mohammed, A.M, & Abdul-Aziz, F. (2017). The Impact of Working Capital Management on Corporate Performance: Evidence from Listed Non-Financial Firms in Ghana. *European Journal of Accounting, Auditing and Finance Research*, Vol. (5) issue 3 pages: 68-75.

Jaipur National University (2013) “Cost and Management Accounting” Jaipur First Edition, pages: 4–6.

Kechema, T. (2019). “Determinants of Working Capital Management for Sustainable Banking Industry Development in Ethiopia: Empirical Analysis on the Liquidity and Profitability.” vol. (5), pages: 37-47.

Kofi, A. R., Awunyo –Vito, D., & Lawer, A. P. (2013). “Working capital management and profitability: Evidence from Ghanaian listed manufacturing firms” *Journal of Economics and International Finance* Vol. 5(9), pages: 373-379.

Korankye, T. & Serwaah, R. (2013). “Empirical Analysis of Working Capital Management and its Impact on the Profitability of Listed Manufacturing Firms in Ghana.” *Research Journal of Finance and Accounting* Vol. 4 (1), pages: 124-131.

K. V. Smith (1973), “State of the art of working capital management,” *Financial Management*, vol. (2) issue 3, pages: 50–55.

Lazaridis, I. & Tryfonidis, D. (2006). “The relationship between working capital management and profitability of listed companies in the Athens Stock Exchange. Electronic copy available at: <http://ssrn.com/abstract=931591>

Makridakis, S., & Wheelwright, S. C. (1978). *Interactive forecasting univariate and multivariate methods*. California: Holden-Day Inc.

Mohamed, R.Y., Abdol, F.G, Ahmar, S. A., &Sungip, N. (2018). Working capital management and its effect on profitability: *Empirical evidence from Malaysian capital market Insight Journal* Vol.1, issue 1 pages: 71-87.

Muhammad, H., Ashfaq. U,&Waqas.M. (2016). “The Relationship between Working Capital Management and Profitability: A Case Study of Tobacco Industry of Pakistan” *Journal of Asian Finance, Economics and Business* Vol. 3 Issue 2 pages: 13-20.

Mogaka, D.M., &Jagongo, A. (2013). Working Capital Management and Firm Profitability: Empirical Evidence from Manufacturing and Construction Firms Listed on Nairobi Securities. *International Journal of Accounting and Taxation*, Vol.1 (1) pages: 1-14.

(Mongrut, S., Fuenzalida, D.O., Cubillas, C. Z., &Cubillas, J. Z. (2014).“Determinants of Working Capital Management in Latin American Companies” *REVISTA INNOVAR Journal* Vol. 24, issue 51 Pages: 5-18.

Napompech, K. (2012). Effects of Working Capital Management on the Profitability of Thai Listed Firms.*International Journal of Trade, Economics and Finance*, Vol. 3(2), pages: 227-232.

National Bank of Ethiopia Annual Report, 2016/2017

Nobanee, H., & Haddad, A. (2014).Working Capital Management and Corporate Profitability of Japanese Firms. *The Empirical Economics Letters*, Vol. 13(1), pages: 39-44.

Paul, P. &Mitra, P. (2018). Analysis of the effect of Working Capital Management on Profitability of the Firm: Evidence from Indian steel Industry. *Asia-Pacific Journal of Management* Vol. (14) Issue (1-2) pages: 32-38.

Ponsian, N., chrispina, K., Tago, G. and Mkiibi, H. (2014).“The effect of working capital management on profitability.” Vol. 2, No. 6, pages: 347-355.

T, N.T. and S, A.C. (2018). “Working Capital Management Practices: A Comparative Study of Ethiopia with United States, Australia, Canada and Pakistan”, IOSR *Journal of Economics and Finance* Vol. 9, Issue 2 Pages: 21-35.

Terfasa, S, D. (2018). “Assessment of Working Capital Management Practices: Case Study on Small Business Enterprises in Selected Towns of South West Shoa Zone, Ethiopia”, *Horn Africa Journal of Business and Economics* (HAJBE), Vol. 1(2), pages: 49-64.

Tabot, S, .E. &Brijlal, P. (2014). The effect of working capital management on profitability: The case of Small Medium and Micro Enterprises in South Africa. *Journal of Accounting &management* Vol. (4), No. 2 Pages: 21-35.

TesfayeAyele (2016).“Working Capital Management on Firm’s Profitability of Manufacturing Share Companies in Addis Ababa, Ethiopia”. Unpublished Master thesis St. Mary’s University College: Ethiopia.

TewodrosDinberu (2013). “Working Capital Management and Firm Performance: Evidence from Panel Data Analysis of Selected Public Enterprise”. Unpublished Master thesis St. Mary’s University College: Ethiopia.

UIHassen, N., Muhammed, M., Amjad, M. &Hussain, M. (2014). “Effects of working capital management on firm performance: An empirical study of non-financial listed Firms in Pakistan.” *International Journal of Academic Research in Business and Social Sciences*, Vol. (4), No.6 pages: 114-132.

V.K.BHALLA. *Financial management & Policy* (text and cases). (4e pp 181-182).

Vural, G., Gökhan, A.S., &Hüseyin, E.Ç., (2012). “Affects of Working Capital Management on Firm’s Performance: Evidence from Turkey.”*International Journal of Economics and Financial* Vol. (2), issue 4 pages: 488-495.

Wauna, S. &Obwogi, J. (2015). “An Assessment of the Effects of Inventory Management Procedures on Performance of Kengen”, *International Journal of Scientific and Research Publications*, Vol. (5), Issue 10 pages: 1-15.

WobshetMengesha (2014). “The impact of Working Capital Management on Firms’ Performance in Case of 11 Selected Metal Manufacturing Companies in Addis Ababa, Ethiopia ”. Unpublished Master thesis of university of Jimma University College of business and economics department of Accounting and Finance: Ethiopia.

Annexes

Appendix 1: Variable and its measurement

Variables	Measurement
Cash conversion cycle	Average Collection Period + Inventory turnover in days - Payables deferral period)
Average collection period (ACP)	$\frac{\text{Receivables}}{\text{Sales}} \times 365 \text{days}$
Inventory conversion period	$\frac{\text{Inventory}}{\text{Cost of goods sold}} \times 365 \text{days}$
Current Asset to Total Asset	$\frac{\text{Current asset}}{\text{Total Asset}}$
Current Liabilities to Total Asset	$\frac{\text{Current Liabilities}}{\text{Total Asset}}$
Firm size	Natural logarithm of total assets
Leverage	$\frac{\text{Total Debt}}{\text{Total Assets}}$
Liquidity/Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
Return on Asset (ROA)	$\frac{\text{Net Income}}{\text{Total Asset (TA)}}$
Return on Equity (ROE)	$\frac{\text{Net profit}}{\text{Total Asset (TA)}}$

Appendix 2- Descriptive Statistics

	ROA	ROE	CCC	ACP	ICP	CA_TA	CL_TA	CA_CL	FIRM_SIZE	TD_TA
Mean	0.18	0.13	100.99	13.90	105.53	0.67	0.39	2.01	19.08	0.58
Median	0.19	0.14	88.91	9.18	99.60	0.65	0.38	1.80	19.19	0.53
Maximum	0.26	0.18	183.28	45.19	192.45	1.01	0.75	3.86	20.05	0.95
Minimum	0.08	0.07	58.98	2.85	45.11	0.30	0.15	0.75	17.70	0.29
Std. Dev.	0.06	0.04	37.65	14.57	40.76	0.19	0.19	0.87	0.68	0.19
Skewness	-0.37	-0.30	0.93	1.39	0.56	0.21	0.88	0.68	-0.54	0.82
Kurtosis	1.91	1.73	2.79	3.20	2.85	3.03	2.59	2.76	2.49	2.72
Jarque-Bera	44.51	49.63	88.26	197.82	32.08	4.42	82.65	48.15	36.24	70.88
Probability	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00
Sum	110.08	79.42	61601.84	8478.6	64375.82	406.80	237.67	1228.15	11636.5	351.15
Sum Sq. Dev.	1.88	0.86	863421.6	129357.10	1011651.0	21.75	21.89	456.25	282.64	22.93
Observations	610	610	610	610	610	610	610	610	610	610

Appendix 3- correlation Analysis

		Correlations									
		ROA	ROE	CCC	ACP	ICP	CATA	CLTA	CACL	FIRMSIZE	TDTA
ROA	Pearson	1	.999**	-.110**	-.064	-.096*	.230**	.180**	-.013	-.299**	.942**
	Sig. (2-		0.000	.007	.114	.018	.000	.000	.743	.000	.000
	N	610	610	610	610	610	610	610	610	610	610
ROE	Pearson	.999**	1	-.114**	-.064	-.099*	.245**	.188**	-.012	-.306**	.937**
	Sig. (2-	0.000		.005	.113	.014	.000	.000	.768	.000	.000
	N	610	610	610	610	610	610	610	610	610	610
CCC	Pearson	-.110**	-.114**	1	.430**	.895**	.039	-.036	.052	.083*	-.037
	Sig. (2-	.007	.005		.000	.000	.338	.372	.198	.040	.364
	N	610	610	655	610	610	610	610	610	610	610
ACP	Pearson	-.064	-.064	.430**	1	.139**	.035	.003	.082*	.101*	-.018
	Sig. (2-	.114	.113	.000		.001	.391	.947	.042	.012	.660
	N	610	610	610	610	610	610	610	610	610	610
ICP	Pearson	-.096*	-.099*	.895**	.139**	1	.047	-.002	-.012	.102*	-.027
	Sig. (2-	.018	.014	.000	.001		.242	.967	.776	.012	.500
	N	610	610	610	610	610	610	610	610	610	610
CATA	Pearson	.230**	.245**	.039	.035	.047	1	.508**	.025	-.325**	.168**
	Sig. (2-	.000	.000	.338	.391	.242		.000	.539	.000	.000
	N	610	610	610	610	610	610	610	610	610	610
CLTA	Pearson	.180**	.188**	-.036	.003	-.002	.508**	1	-.126**	-.053	.264**
	Sig. (2-	.000	.000	.372	.947	.967	.000		.002	.194	.000
	N	610	610	610	610	610	610	610	610	610	610
CACL	Pearson	-.013	-.012	.052	.082*	-.012	.025	-.126**	1	-.198**	-.015
	Sig. (2-	.743	.768	.198	.042	.776	.539	.002		.000	.718
	N	610	610	610	610	610	610	610	610	610	610
FIRMSIZE	Pearson	-.299**	-.306**	.083*	.101*	.102*	-.325**	-.053	-.198**	1	-.265**
	Sig. (2-	.000	.000	.040	.012	.012	.000	.194	.000		.000
	N	610	610	610	610	610	610	610	610	610	610
TDTA	Pearson	.942**	.937**	-.037	-.018	-.027	.168**	.264**	-.015	-.265**	1
	Sig. (2-	.000	.000	.364	.660	.500	.000	.000	.718	.000	
	N	610	610	610	610	610	610	610	610	610	610

** . Correlation is significant at the 0.01 level (2-tailed).

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

Appendix 4- Multi Collinearity Analysis

Coefficientsa

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
CCC	.102	9.839
ACP	.499	2.004
ICP	.121	8.234
1 CATA	.641	1.561
CLTA	.667	1.499
CACL	.924	1.082
FIRMSIZE	.756	1.323
TDTA	.863	1.159

a. Dependent Variable: ROA

Coefficients a

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
CCC	.102	9.839
ACP	.499	2.004
ICP	.121	8.234
1 CATA	.641	1.561
CLTA	.667	1.499
CACL	.924	1.082
FIRMSIZE	.756	1.323
TDTA	.863	1.159

a. Dependent variable is ROE

