ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

MBA IN GENERAL MANAGEMENT PROGRAM

THE EFFECT OF WORKING CAPITAL MANAGEMENT ON THE PROFITABILITY OF PRIVATE COMMERCIAL BANKS IN ETHIOPIA

BY

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ADVISOR

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APPROVED BY BOARD OF EXAMINERS

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CERTIFICATE

This is to certify that **Yebelay Getahun** has worked his thesis on the topic the effect of working capital management on the profitability of private commercial banks in Ethiopia under my supervision. To my belief, this work undertaken by Yebelay Getahun and it is original and qualifies for submission in partial fulfillment of the requirements for the award of MBA in general management.

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Date: _____

ABSTRACT

Effective working capital management focuses on keeping and having an optimal level of working capital for maximizing organizational value. The purpose of this study is to examine the impact of working capital management on the profitability of private commercial banks in Ethiopia. Financial statements of a sample of six (6) Private commercial banks were used for a period of eleven years (2005-2015) with the total of 66 observations. The Data was analyzed on quantitative basis using descriptive and regression analysis (Ordinary Least Square) method. It examined variables such as debtors collection period, creditors payment period, cash conversion cycle, and liquidity in relation to return on asset (ROA).In addition the study used credit risk, as measured by loan losses amount in relation to total loan amount; size of banks, as measured by logarithm of asset; efficiency as measured by the ratio of non -interest expense to net income, as control variables. The key findings from the study are; debtors' collection period and cash conversion cycle are statistically significant and negative relationship with private commercial banks' profitability. On the other hand, variables like creditors' payment period and liquidity are statistically significant and positive relationship with private commercial banks' profitability. In general paying customers longer and collecting payments from customers earlier, and the ability of banks to meet short-term obligation or commitments are all associated with an increase in the private commercial banks' performance. Policy makers of private commercial banks, therefore, can increase profitability by improving the performance of management of working capital components.

Keywords: *working capital management, profitability, private commercial banks*

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ACRONYMS

CBE –Commercial Bank of Ethiopia

CCC –Cash Conversion Cycle

CD -Customer Deposit

CLRM-Classical Linear Regression Model

COGS –Cost of Goods Sold

CPP-Creditors Payment Period

DCP-Debtors Collection Period

E-Efficiency

GOP –Gross Operating Profit

L-Liquidity

NPM –Net Profit Margin

OLS-Ordinary Least Square

ROA –Return on Asset

ROE- Return on Equity

S.C. –Share Company

SOB –Size of the Bank

SPSS-Statistical Package for Social Science

WCM –Working Capital Management

WCP-Working Capital Policy

CHAPTER ONE

The first chapter of this thesis introduces the area of study, providing a background for the paper. This chapter is organized under different sections in which background of the study, statement of the problem, objectives of the study, research hypothesis significance of the study, delimitation of the study and finally structure of the paper was presented.

1.1 BACKGROUND

Banking service contributes to economic growth by producing the financial means to facilitate production in other industries (Rajan & Zingales, 1998; Levine, 1998). However, the banking firms sometimes find it difficult to finance its operation. This financing problem also affects the management of working capital of the individual banks which intend affect their level of profitability (Goddard et al., 2004).

The important role played by banks in the developing countries include providing financial services necessary for enterprises and customers to undertake their business operations, and providing of jobs for citizens in the country. One of the most important factors for a firm to consider is the management of working capital, which is related to short term financing and investment decision of a firm. The function of obtaining efficient working capital management is to maintain current assets and current liabilities in respect to each other and to generate maximum returns. Working capital management is a vital element in managing finance of an enterprise due to the reasons such as to determine the composition of the capital for operating and investing in the firms. Excessive levels of current assets can easily result in a firm's realizing a substandard return on investment while, firms with too few current assets may incur shortages and difficulties in maintaining smooth operations (Van, Horne, J. C. and Wachowicz,2000).

The efficient working capital management involves planning and controlling current assets and current liabilities to eliminate the risk of inability to meet short term financial obligations and the efficient working capital management avoids excessive investment in current assets (Eljelly, 2004).

The working capital management is dealing with current assets and current liabilities and directly affecting the liquidity and profitability of such firm. Current assets are the assets that in the normal course of business return to the form of cash within a short period of time, ordinarily within a year and such temporary investment as may be readily converted into cash upon need. Also, current liabilities are the obligations that effect in implementing business activities in the normal course of business return to the form of cash within a short period of time, ordinarily within a year and such obligations as may be readily payable by cash upon need (Joshi, 1995).

Working capital management is a very sensitive area in the field of financial management which involves making decision on the amount and composition of current assets and its' financing (Joshi, 1995). In financial management, the utmost aim of any firm is to maximize the profit. But, there is other important aim that the firm should preserving liquidity. In here, a problem incurs that increasing profits at the cost of liquidity can bring serious problems to the firm. Therefore, there must be a tradeoff between the profitability and liquidity of the firm. One aim should not be at cost of the other because both profitability and liquidity have their importance. Unless any firm doesn't concern of profit, such firm cannot survive for a longer period. On the other hand, unless any firm doesn't concern of liquidity, such firm may be having insolvent or bankrupt. Therefore, even any organization should utmost care of working capital management and will finally affect the firm's profitability (Raheman and Naseer, 2007).

It is therefore a critical issue to know and understand the effects of working capital management and its influence on firm’s profitability. Indeed, a lot of research has been conducted in different countries to show the impacts of working capital management components on firms Profitability. Therefore it’s critical to see the impact of working capital management on profitability. Accordingly, the general objective of the study is to examine the impact of working capital management on the profitability of private commercial banks in Ethiopia.

1.2 STATEMENT OF THE PROBLEM

Effective working capital management focuses on keeping and having an optimal level of working capital for maximizing organizational value. It results; large inventory and a justified trade credit policy may lead to high sales, larger inventory reduces the risk of a stock-out. Firm can encourage by providing the trade credit to increase sales because it allows customers to assess product quality before paying (Long, Malitz and Ravid, 1993; Deloof, M. and M.Jeger, 1996).

Also, the fact that an organization makes profits is not necessarily an indication of effective management of its working capital because a company can be endowed with assets and profitability but short of liquidity if its assets cannot readily be converted into cash. As such, there will be shortage of cash available for the firm's utilization as at when due. Such an organization may run into debts that could affect its performance in the long run because the smooth running of operations of the organization comes to a sudden halt and it will not be able to finance its obligations as at when due(Eljelly, 2004).

The successful management of working capital requires a well designed policy and daily follow up. Brigham and Houston (2002), highlights that working capital management involves both setting working capital policy and carrying out that policy in the day-to-day operations. It equally involves making appropriate investments decisions in cash, receivables and inventories as well as the level and mix of short-term financing. Working capital has become an important element in investment decisions since the amount and day to day management has become an important determinant of profitability (Deloof, 2003). However, significant consideration is not often made of working capital when financing decisions are made by firms because it involves investment and financing in the short term.

Companies often desire to maintain liquidity and operational efficiency by minimizing their investment in working capital (Eugene, 2004). The problem comes at the level where the question as concerns the impact of such decisions is asked. This extends also to the impact on the solvency of a firm in the long run. Solvency is the relative excess of value of assets over the liabilities of a firm. This is crucial because if the firm is profitable, then it will have resources to meet up with its liabilities and thus will be solvent. But if the company is not profitable there will

be an excess of liabilities over assets and thus the firm will be insolvent due to the inability of the firm to meet up with its liabilities when they come due. This situation if not solved may further lead to an eventual bankruptcy of the firm (Eugene, 2004).

The above consequence rise to attract the attention of researchers all over the world and much of the currently available empirical literature on working capital management is focused on its impact on firms in developed countries.

Priya (2016) conducted a research on working capital management and profitability of Indian commercial banks and the results suggest that working capital management and performance are positively correlated. The findings showed that there is significant positive relationship between banks' performance and bank size; there is a significant negative relationship between profitability and cash conversion cycle and leverage; there is a significant negative relationship between liquidity and creditors' payment period and leverage; and there is a significant positive relationship between liquidity and debtors' collection period, cash conversion cycle and credit risk. Similarly, Michael and Benjamin (2014) conducted their research on the effect of working capital management of Ghana banks profitability, and their empirical findings suggest that cash conversion cycle is inversely related to bank's profitability marginally. In particular, they found that leverage of the banks exhibit statistically significantly a positive impact on banks' profitability.

There are studies with reference to Ethiopia on working capital management and firm profitability; Tewodros (2010) studied its impact on profitability by taking 11 private limited manufacturing firms. He took ROA, OPM and ROE as a measure of profitability. The results show that longer accounts receivable and inventory holding periods are associated with lower profitability. There is also negative relationship between accounts payable period and profitability measures; however, except for operating profit margin this relationship is not statistically significant. The results also show that there exists significant negative relationship between cash conversion cycle and profitability measures of the sampled firms.

On the other hand, Tiringo (2013) examined the impact of WCM on profitability of micro and small enterprises in Ethiopia for the case of Bahir dar city administration. The result showed that there is a strong positive relationship between number of day's accounts payable and enterprises

profitability. However, number of days accounts receivable, number of days inventory and cash conversion cycle have a significant negative impact on profitability.

Even if the above studies in Ethiopia are conducted on the effects of working capital management on the profitability of firms ; thus , while searching on internet, browsing through the books and journals the researcher didn't find directly related to research topics carried out on the effects of working capital management on the profitability of private commercial banks in Ethiopia. Therefore, the researcher believed that, the problem is almost untouched and there is a knowledge gap on the area.

All these constitute the problem of the investigation, and the objective of the study is examining the impact of working capital management on the profitability of private commercial banks in Ethiopia.

1.3 OBJECTIVE OF THE STUDY

The general and specific objectives of the study are set below.

1.3.1 GENERAL OBJECTIVE

The general objective of this study is to examine the impact of working capital management on profitability of private commercial banks in Ethiopia.

1.3.2 SPECIFIC OBJECTIVES

The specific objectives of this study are:-

- To analyze the effect of debtors collection period (DCP) on the profitability of private commercial banks.
- To examine the effect of creditors payment period (CPP) on the profitability of private commercial banks.
- To examine the effect of cash conversion cycle (CCC) on the profitability of private commercial banks.
- To examine the effect of liquidity (L) on the profitability of private commercial banks.

1.4 RESEARCH HYPOTHESIS

In line with the broad purpose statement the following hypothesis are formulated for investigation. Hypotheses of the study stands on the theories related to working capital management and bank's profitability that has been developed over the years by banking area researcher's and past empirical studies related to a bank's profitability. Hence, based on the objective, the present study tested the following hypotheses:

1.4.1 DEBTORS COLLECTION PERIOD

The foregoing captures consensus of experts' on views on the relationship between receivables management and profitability objective of most business firms.

Lazaridis and Tryfonidis (2006) find the negative relationship between number of day's accounts receivables and profitability measured by gross operating profit. This negative result demonstrated that companies can increase their profitability by decreasing credit term giving to their customers. Deloof (2003) find the significant negative relation between the average number of days accounts receivable and gross operating income as a measure of profitability. Raheman and Nasr (2007) the results report that profitability has significant negative relation with accounts receivable as a measure of liquidity. Furthermore, there is a negative relationship between average collection period and profitability found by Alipour (2011). Also Şamiloglu and Demirguneş (2008) findings of the study show that accounts receivables period affect firm profitability negatively.

Base on the prior studies and discussion, hypothesis 1 is proposed as follows:

H1: *There is a significant negative relationship between debtors' collection period and profitability of private commercial banks.*

1.4.2 CREDITORS PAYMENT PERIOD

Lazaridis and Tryfonidis (2006) explain significant positive relationship between gross operating profit as a measure of profitability and number of day's accounts payable. The researcher explain this positive significant result as a company delays its payment which affects the higher level of working capital and use to increase its profitability which less-profit companies would make use

of this to delay their payment. Priya(2016) studied, working capital management and profitability of commercial banks in India and found creditors payment period is positively related with profitability of commercial banks in India.

Hypothesis 2 can be stated as follows:

H2: *There is significant positive relationship between creditors' payment period and profitability of private commercial banks.*

1.4.3 CASH CONVERSION CYCLE

The relationship between cash conversion period and profitability does not have a clear demarcation as two schools of thought have emerged namely: the traditional belief that a short cash conversion period favors profitability and the contrary view that a longer cash conversion period can lead to improvement of profitability (Shin and Soenen, 1998). Athens, Lazaridis and Tryfondis (2005) study a sample of 131 listed firms covering 2001-2004, and find a strong negative relationship between profitability and CCC. They thus advise that financial managers can create profits for their companies by correctly handling the cash conversion cycle (CCC) and keep each component of CCC at optimal level.

Base on the prior empirical studies, the researcher expect profitable company to have effective working capital management which results in the shorter cash conversion cycle.

Hypothesis 3 is formulated as follows:
H3: *There is significant negative relationship between cash conversion cycle and profitability of private commercial banks.*

1.4.4 LIQUIDITY

Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. Liquidity is important for banks because it helps it to access its resources quickly in order to meet its financial obligations. Without cash, banks can quickly get into trouble with their creditors. Banks with a higher debt/equity ratio will be less liquid, as more of their available cash must be used to service and reduce the debt. According to Dang (2011) adequate level of liquidity is positively related with bank profitability. Bourke (1989) and Kosmidou *et al*. (2005) found a significant

positive relationship between liquidity and bank profits. However, the study conducted in China and Malaysia found that liquidity level of banks has no relationship with the performances of banks (Said and Tumin, 2011). Molyneux *et al.*, (1992) and Guru *et al.* (1999) discovered that negative correlation exists between the level of liquidity and profitability. So based on the previous empirical studies the researcher is neutral on the idea.

Hypothesis 4 is formulated as follows:

H4: *There is significant positive/negative relationship between liquidity and profitability of private commercial banks.*

1.5 SIGNIFICANCE OF THE STUDY

The purpose of this study is examining the effect of working capital management on private commercial banks profitability. It is expected that the result of this study will contribute to current knowledge; the effect of working capital management on profitability of private commercial banks.

Efficient financial management requires the existence of some objectives or goals. This is because judgment as to whether or not a financial decision is efficient must be made in light of an appropriate management of working capital while at the same time sustaining good returns to the shareholders. This study would greatly benefit policy makers of private commercial banks. By understanding the relationship between working capital management and profitability, policy makers would be able to plan their working capital strategies based on working capital management policies that enhance profitability.

The study has an important resource document for academicians and future researchers who may wish to investigate the performance of firms in relation to working capital management and profitability.

1.6 SCOPE OF THE STUDY

The study is delimited to the impacts of working capital management on the profitability of private commercial banks in Ethiopia. The total sample size of the study is six private commercial banks that have eleven years of data from year 2005 – 2015.

Even if currently eighteen commercial banks operating in Ethiopia, only seventeen private commercial banks are used as population and from those, six banks are selected (Dashen bank, Awash bank, Bank of Abyssinia, United bank, Nib bank, and Wegagen bank) were used as a sample, because the other banks don't have eleven years data for the study. Commercial bank of Ethiopia is not included in this study, because CBE is the leading and dominant bank in Ethiopia by its financial performance. So, the researcher believed that including CBE in this study will affect the result and it might mislead the conclusion.

In this study ROA used as a main performance measure. The reason for using ROA as the measurement of bank performance was because ROA reflects the ability of a bank's management to generate profits from the bank's assets and also indicates how effectively the bank's assets are managed to generate revenues. This study only looked independent variables like debtors' collection period, creditors' payment period, cash conversion cycle and liquidity. Other independent control variables are also looked like credit risk, efficiency and size.

1.7 ORGANIZATION OF THE STUDY

The paper is organized in five chapters;

Chapter one provides an introductory overview of the full study comprising the statement of the problem, objectives of the study, research hypothesis, relevance of the study, delimitation of the study, and how the study was organized also captured in this chapter.

The second chapter, literature review gives an extensive literature study on working capital and the managements of its different parts. Chapter three presents the methodology used for the study and gives a detailed overview of the research design, data source and collection procedures and data analysis procedures. It also provides the description of the relevant variables that was included in the model. Chapter four focuses on the research results and analysis .Chapter five concludes and offer recommendations for the study.

CHAPTER TWO

LITERATURE REVIEW

The purpose of this chapter is to introduce key principles around working capital and general theory around it. This chapter introduces drivers behind working capital, the theoretical review of working capital management and reviews of prior research made on working capital management.

2.1 THEORETICAL REVIEW

2.1.1 AN OVERVIEW OF WORKING CAPITAL

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

According to Gitman (2009) the objective of Working Capital Management (WCM) is to minimize the Cash Conversion Cycle (CCC) the amount of capital tied up in the firm's current assets. It focuses on controlling account receivables and their collection process, and managing the investment in inventory. Working capital management is vital for all business survival, sustainability and its direct impact on performance. Working capital refers to investment in current assets which are required to carry out the operations of a business (Firer, Jordan, Ross, Westerfield, 2008). Working capital also called circulating capital or short term capital is capital which is needed for investing in current assets. Von Horne & John H (2000) define working

capital as "the amount of current assets that have not been supplied by current short term creditors".

From the value point of view, working capital can be seen as gross working capital and net working capital as explained;

A. Gross working capital: it refers to a company's investment in current assets. Current assets are those assets which could be converted into cash within an accounting year. Current assets include trade debtors, prepayments, cash balances just to name a few. Khan & Jain (2005) defines gross working capital as the amount of funds invested in current assets that are employed in business and focuses attention on how to optimize investment in current assets and how current assets are financed.

B. Net working capital: It is the difference between current assets are those assets that can be converted into cash within a year and claims that are expected to mature for payment within an accounting year, thus the difference between current assets and current liabilities. Current liabilities include bill payable, accruals, trade creditors, short term loans, outstanding expenses. A positive working capital means that the company is able to pay off its short term obligations while a negative working capital means that the company is not able to meet its long term obligations (Brigham and Houston, 2003).

From the time perspective, the term working capital can be divided into permanent and temporary as explained;

A. Permanent Working Capital: it's also known as fixed working capital and it refers to a minimum amount of investment in all working capital which is required at all times to carry out minimum level of business activities (Brigham and Houston, 2003). In other words, it represents the current assets required on a continuing basis over the entire year. Further, working capital has a limited life and usually not exceeding a year, in actual practice some part of the investment in that is always permanent. Since firms have relatively longer life and production does not stop at the end of a particular accounting period some investment is always locked up in the form of raw materials, work-in progress, finished stocks, book debts and cash. Investment in these components of working capital is simply carried forward to the next year. This minimum level of investment in current assets that is required to continue the business without interruption is

referred to as permanent working capital (Fabozzi and Peterson, 2003). It's financed through long term debt and common stock.

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

2.1.2. WORKING CAPITAL MANAGEMENT

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

Khan and Jain (2007) also stress that working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the

interrelationship that exists between them. Working Capital Management involves the relationship between a firms' short –term assets and short –term liabilities.

Working Capital Management also refers to the decisions relating to working capital and short-term financing and it involves managing the relationship between a firm's short-term assets and its short-term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses. Working capital entails short term decisions generally relating to the next one year period which are "reversible". These decisions are therefore not taken on the same basis as capital investment decision rather they will be based on cash flow and or profitability. Management will use a combination of policies and techniques of working capital. These policies aim at managing the current assets (generally cash and cash equivalent, inventories and debtors).

According to Horne (2000) working capital management is the administration of current assets in the name of cash, marketable securities, receivables, inventories. Block and Hirt (1992) are of the view that, working capital management involves the financing and management of the current assets of the firm.

2.1.3 IMPORTANCE OF WORKING CAPITAL MANAGEMENT

Weston and Brigham (1977) working capital refers to the resources of a firm that are used to conduct daily operations. Without cash, bills can't be paid hence the following point explain the importance of working capital management;

A. **Solvency**: A business can run smoothly in the presence of adequate working capital. In this situation, short term liabilities can be paid within a short period which helps to strengthen the business solvency position.

B. **Ability to face crisis**: A business can naturally face problems like economic depression, fluctuation, and strike. The availability of working capital in sufficient volume gives the business the ability to face such problems.

C. **Regular return:** The management of working capital helps a firm to pay quick and regular dividends to its investors. Therefore because of adequate working capital, a business does not have to plough back profits thereby providing confidence to its investors.

D. **Smooth operation of a business**: A company with sufficient working capital can smoothly operate a business. With adequate working capital, it can make regular payment of salaries and other daily commitments. By paying expenses at time, employee's morale increases as well as their efficiency.

2.1.4 LIQUIDITY PREFERENCE THEORY

This theory seeks to examine the reasons why people or companies hold money in liquid form, given that it does not yield any revenue. According to the theory, money is the most liquid asset. Liquidity is an attribute to an asset. The more quickly an asset is converted into money, the more liquid the asset. When an asset is easily converted into cash, it provides liquidity for the company in its day-to-day operations, it enables the company to pay its short term obligations and it is used as well to invest in working capital.

2.2. BANK WORKING CAPITAL COMPONENTS

Most empirical study on working capital management (WCM) is based on large non-financial corporate institutions. Obviously, financial management of banks and these non-financial enterprises bear strong similarities. However, there is a significant disparity which substantiates the study of financial management of banks. Since banks of developing countries experience difficulties in accessing external finance, they rely more strongly on internally savings funds than larger banks from developed economies. Working capital management thus plays an important role in the liquidity of banks in developing countries (Berger *et al*, 2001). There is an assertion confirmed that working capital related problems such as overtrading are cited among the most significant reasons for the failure of rural and community banks (Owusu, 2008).

2.2.1 DEBTORS COLLCTION PRIOD

All efforts the financial manager makes in setting credit standard, credit terms and credit collection periods are geared towards establishing an optimal credit policy for the firm. An optimal credit policy is one which maximizes a firm's value, and it is a point where Pandey (2005) assets that the incremental or marginal rate of return of an investment is equal to the incremental or marginal cost of funds used to finance that investment. Optimal credit policy invariably translates into an optimal investment in receivables which, in turn, maximizes firm's

value or net-worth. Usually a firm lengthens its credit period to raise its operating profit through expanded sales turnover program. However, there will be net increase in operating profit only when the cost of extended credit period is less than the incremental operating profit (Pandey, 2005 and Egbide and Enyi, 2008).

2.2.2 CREDITORS PAYMENT PERIOD

The main purpose of effective management of the various components of working capital (accounts payable inclusive), as earlier said, is due to the likely influence each component will have on the company's performance (measured here by profitability) and on the company's stability (measured by liquidity). Therefore, three different components of cash conversion cycle could be managed differently to enhance both profitability and growth of the enterprise (Lazaridis and Tryfonidis, 2005 and Egbide and Enyi, 2008). Accounts payables are largely dependent on the firm's purchases which, in turn, will depend on the volume of production.
Thus, a decision as to whether to take trade discount or not, or to stretch accounts payables or not, should be based on the cost and benefits analysis of a firm's credit policy in relation to profitability and or liquidity of the enterprise.

2.2.3 CASH CONVERSION CYCLE

Another aim of working capital management is to maximize time outflows and inflows of cash otherwise known as the cash conversion cycle while simultaneously optimizing process costs and process quality. Usually the process from when you spend money to when you get money is undoubtedly the single most important process to optimize for any business. It is therefore not surprising why most researchers adopt cash conversion cycle or period as the most comprehensive measure of working capital management as well as testing its impact on profitability (Deloof, 2003 and Reheman and Nasir, 2007). Nonetheless, the relationship between cash conversion period and profitability does not have a clear demarcation as two schools of thought have emerged namely: the traditional belief that a short cash conversion period favors profitability and the contrary view that a longer cash conversion period can lead to improvement of profitability (Shin and Soenen, 1998).

2.2.4 LIQUIDITY

Jose et al (1996) showed that day-to-day management of a firm's short term assets and liabilities plays an important role in the success of the firm. Firms with glowing long term prospects and healthy bottom lines do not remain solvent without good liquidity management. Walt (2009) is of the view that profitability is more important because profit can usually be turned into a liquid asset, and that liquidity is also important but does not mean that the company is profitable. Don (2009), while acknowledging the relative importance of both, submits that liquidity is more important because it has to do with the immediate survival of the company. Profitability tells whether the business is sustainable while liquidity tells if the business has enough cash to pay its obligations.

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

2.3 EMPIRICAL LITERATURE

Empirically, numerous studies have been conducted to examine the effect of working capital management on profitability in the different countries of the world and various results were found which let to varying conclusions. The quest to know if the cause of corporate failure is due to the lack of short term financing or inefficient management of working capital pushed Peel and Wilson (1996) to examined working capital and financial management in the small firm sector of UK. They made use of quantitative survey method and concluded that for small and growing businesses, an efficient management of working capital is a vital component of success and survival that is both profitability and liquidity. They also highlighted that smaller firms should adopt formal working capital management routines in order to reduce the probability of business failure as well as to enhance business performance. Given these peculiarities, they stressed the

efficient management of working capital and good credit management practice as being pivotal to the health and performance of small firm sector.

Vida et al (2011) made use of 101 companies listed on Tehran Stock Exchange over the period of 2004-2008 to study the relationship between working capital management and corporate profitability of firms. Using the multivariate regression and Pearson correlation, the finding reveals that the cash conversion cycle which is a key measure of working capital management has a relationship with corporate profitability.

Sharma (2011) further examined the effect of working capital management on the profitability of Indian firms. With the use of the ordinary least square regression technique, the study reveals that working capital management and profitability are positively correlated in Indian companies. The study also reveals that inventory days and payables days are negatively correlated with a firm's profitability whereas receivable days and the cash conversion period exhibit a positive relationship with a firm's profitability. Contrary to Sharma (2011), using the Pearson's correlation method Meryem (2011) noticed that there is a negative relationship between corporate profitability and the different working capital components; they resolved that Tunisian small and medium sized enterprises dealing in exports should shorten their cash conversion cycle by reducing the number of days of receivables and inventories to increase their profitability.

Erik (2012) equally used the cash conversion cycle as a determinant of working capital management efficiency and gross operating profitability as an indicator of profitability for Finnish and Swedish public companies. Using regression models and correlation analysis his results show that there is a significant effect of working capital management on corporate profitability, he thus concluded that long conversion cycles have a negative effect on profitability while shorter cash conversion cycle will increase profitability. He highlighted that by effectively managing each part of working capital a company can increase cash flow and thus shareholders wealth.

Senthilmani (2013) carried out a research on the impact of working capital management on profitability in UK manufacturing industries using the Pearson's correlation technique. The results show that there is no significant relationship between the working capital components (receivable days, payable days, inventory days, cash conversion cycle) and profitability of the

firm. His results suggest that managers need to focus on core business principles to maximize shareholders wealth.

Priya (2016) conducted a research on working capital management and profitability of Indian commercial banks and the results suggest that working capital management and performance are positively correlated. The findings showed that there is significant positive relationship between banks' performance and bank size; there is a significant negative relationship between profitability and cash conversion cycle and leverage; there is a significant negative relationship between liquidity and creditors' payment period and leverage; and there is a significant positive relationship between liquidity and debtors' collection period, cash conversion cycle and credit risk. Similarly, Michael and Benjamin (2014) conducted their research on the effect of working capital management of Ghana banks on profitability, and their empirical findings suggest that cash conversion cycle is inversely related to bank's profitability marginally. In particular, they found that leverage of the banks exhibit statistically significantly a positive impact on banks' profitability.

2.3.1 STUDIES IN ETHIOPIA

According to the knowledge of the researcher there are no studies with reference to Ethiopia on working capital management and profitability of private commercial banks, but there are many studies conducted on non-financial sectors.

Tewodros (2010) studied the effect of management of working capital policies on firm's profitability a sample of 11 manufacturing private limited companies in Tigray region, Ethiopia for the period of 2005-2009. The finding of descriptive statistics shows that, on average cash conversion cycle takes 313days and with minimum and maximum days of -315 and 2264 respectively. It also took an average 314days to sell inventory. Firms wait an average 120days to pay their purchases and receive payment against sales on an average of 118days.The results show that longer accounts receivable and inventory holding periods are associated with lower profitability. There is also negative relationship between accounts payable period and profitability measures; however, except for operating profit margin this relationship is not statistically significant. The results also show that there exists significant negative relationship between cash conversion cycle and profitability measures of the sampled firms. No significant

relationship between current assets to total assets ratio and profitability measures has been observed. On the other hand, findings show that a highly significant positive relationship between current liabilities to total assets ratio and profitability. Finally, negative relationships between liquidity and profitability measures have also been observed.

Mulualem (2011) studied impact of working capital management on firm's profitability on a sample of 13 manufacturing companies for the period of five years (2005-2009). The study was employed stratified sampling design based on nature and turnover of companies. The finding of descriptive statistics shows that, on average cash conversion cycle takes 129days and with minimum and maximum days of -25 and 343 respectively. It also took an average 97days to sell inventory. Firms wait an average 104days to pay their purchases and receive payment against sales on an average of 58days.The results showed that there is statistical significance negative relationship between profitability and working capital management. Moreover the study found that there is strongly significant positive relationship between size and firm profitability and there is no statistically significance negative relationship between debt and firms profitability.

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

2.4 SUMMARY OF THE CHAPTER AND KNOWLEDGE GAP

Banking service contributes to economic growth by producing the financial means to facilitate production in other industries. However, the banking firms sometimes find it difficult to finance its operation. This financing problem also affects the management of working capital of the

individual banks which intend affect their level of profitability, liquidity management. So, managing working capital effectively helps firms to achieve profitably.

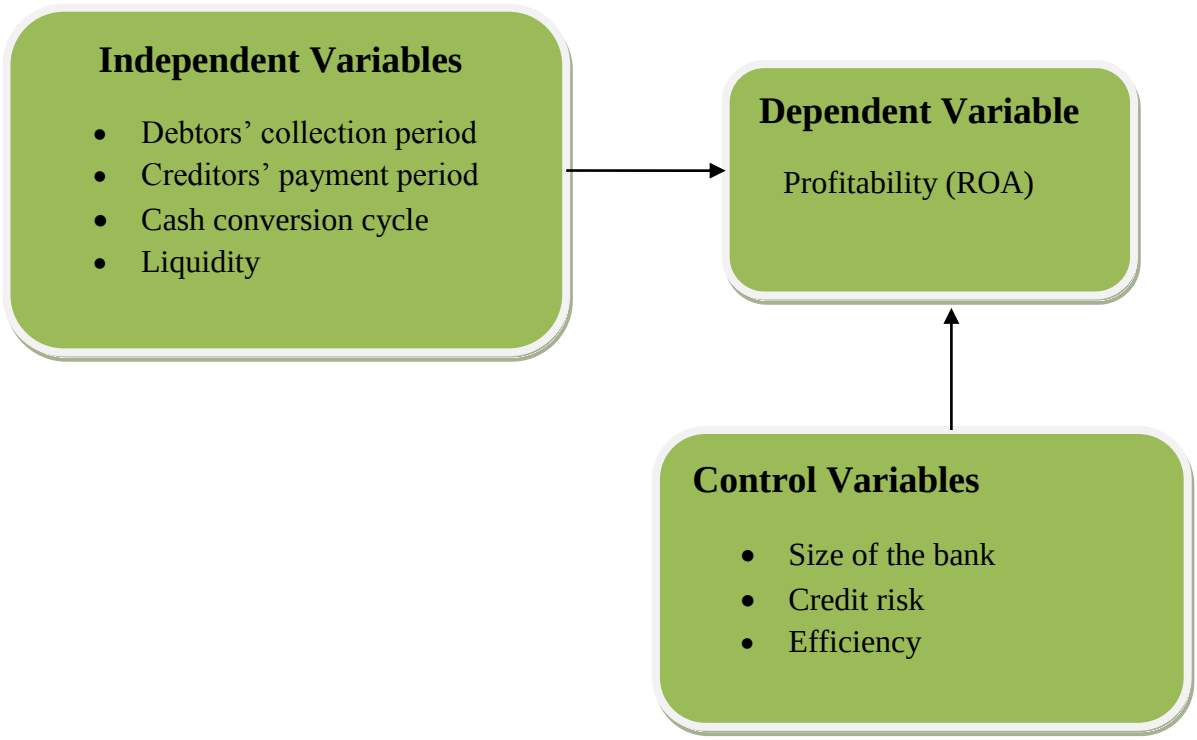
There is a great difference between the components that made up the working capital in the manufacturing sector which is producer of tangible products compared to that in banking sector, that is, producer of intangible products (financial service). While in a traditional manufacturing sector, the current asset is part of the working capital composes of stock, debtors, cash in hand, cash in bank, prepayment, etc and current liability part composes of creditors accruals, short-term loans and overdraft etc. In the banking sectors, the most recognized component that is missing in the lineup of current asset is the "stock". The component of the current liability is almost the same. Though, in both the current asset and current liability may not be referred to as terms used.

Regarding this there are many studies that are conducted on the manufacturing sector, but few studies are conducted on the banking sector. Studies conducted outside of Ethiopia on the banking sectors used components of working capital like debtors collection period, creditors' payment period, cash conversion cycle and liquidity and they tried to fill the gap on the effect of working capital management and profitability of banks. But most of the studies in Ethiopia are focused on manufacturing sector and there is a knowledge gap on the effect of working capital management on the profitability of commercial banks. Accordingly the main objective of this research is examining the effect of working capital management on the profitability of private commercial banks in Ethiopia.

2.5 CONCEPTUAL FRAME WORK

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

Figure1: Conceptual framework



Source: own design from different literatures

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter shows the ways in which the relevant data and its collection methods have helped prove that indeed liquidity is necessary for financial sectors. It covers research designs, data source and collection methods, population and sample size, description of variables, method of data analysis, and model specifications.

3.1 RESEARCH DESIGN

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. The plan is the overall scheme or program of the research .The main purpose of this research is to examine the impact of liquidity on the performance of selected private commercial banks in Ethiopia for the period of year 2005 to year 2015. The study adopted an explanatory research that used a quantitative research design through the use of secondary data.

Schindler and Cooper (2001) discussed that explanatory studies unlike descriptive studies, go beyond observing and describing the condition and tries to explain the reasons of the phenomenon. According to Grover (2003) explanatory research is devoted to finding causal relationships among dependent and independent variables. It does so from theory-based expectations on how and why variables should be related. Hypotheses could be basic (i.e., relationships exist) or could be directional (i.e., positive or negative). The quantitative data gathering methods are useful especially when a study needs to measure the cause and effect relationships evident between pre-selected and discrete variables.

3.2 SAMPLE SIZE AND SAMPLING PROCEDURE

A sample is a sub set of the total population that is of interest for the study topic. This total population is called the target population, to which the results of the study can be generalized (Bryman& Bell Emma, 2007). The purpose of this study is to examine the effect of working capital management on the profitability of private commercial banks in Ethiopia. Because of this the sample population of the study is private commercial banks registered by national bank of Ethiopia and operate in Ethiopia, and for this study 11 years data from 2005-2015 from audited financial reports were used. In this study 6 private commercial banks are selected as sample from 16 private commercial banks, because 11 years data is needed for the study and all the other private commercial banks have not have ten years data. Awash bank, Dashin bank, Abyssinia bank, Nib bank, United bank, and Wegagen bank were used as sample to identify the effect of working capital management on the profitability of private commercial banks in Ethiopia, and made inference based on the finding after testing the explanatory variables (debtors collection period, creditors payment period, cash conversion cycle and liquidity to the dependent variable (ROA).

3.3 DATA SOURCE AND COLLECTION PROCEDURE

Data collection method is a phrase used to describe the way or manner in which a researcher gathers relevant information which he or she is going to use to answer the research questions. Secondary data best source of data when the research uses data that was previously collected maybe for another purpose, used and stored (Hakim, 1982, cited by Saunders et al., 2000). Any published or unpublished work that is one step removed from the original source, usually describing, summarizing analyzing, evaluating, and derived from or based on primary source materials is secondary data (Creswell, 2012).

The research study used secondary data, that derived from financial statements of selected private commercial banks and these data included balance sheet and profit and loss accounts showing annual financial statements of private commercial banks for the period of the data collection period from the years 2005 to 2015. The secondary data was collected through structured document reviews are mainly from the records held by NBE and the banks themselves.

3.4 DATA ANALYSIS

According to Bryman and Bell (2003) data analysis refers to a technique used to make inferences from data collected by means of a systematic and objective identification of specific characteristics. Once data is collected it has to be edited to verify to the completeness of data, coded in order to assign numbers or symbols to the various answers for effective categorization/classification, entered in order to convert the information gathered to a medium for viewing and manipulation (e.g. excel or statistical package for social sciences SPSS) and finally displayed through the use of frequency tables and charts.

To comply with the broad objective the study was based on panel data, which was collected through structured document review. As noted in Baltagi (2005) the advantage of using panel data is that it controls for individual heterogeneity, less collinearity among variables and tracks trends in the data something which simple time-series and cross-sectional data cannot provide. Thus, the collected panel data was analyzed using descriptive statistics, correlations and multiple linear regression analysis. Mean values and standard deviations are used to analyze the general trends of the data from 2005 to 2015. Based on the sector sample of 6 banks a correlation matrix was adopted to examine the relationship between the dependent variable and explanatory variables.

A multiple linear regression model and t-static was used to determine the relative importance of each independent variable in influencing profitability (ROA). The multiple linear regressions model was run, and thus OLS was conducted using SPSS version 20 econometric software package, to test the casual relationship between the firm's profitability and their potential determinants and to determine the most significant and influential explanatory variables affecting the profitability of private commercial banks. The rational for choosing OLS is as noted in Petra (2007) OLS outperforms the other estimators when the following holds; the cross section is small and the time dimension is short. Therefore, as far as both the above facts hold true in this study it is rational to use OLS.

As noted in Brooks (2008) there are basic assumptions required to show that the estimation technique, OLS, had a number of desirable properties, and also so that hypothesis tests regarding the coefficient estimates could validly be conducted. If these Classical Linear Regression Model

(CLRM) assumptions hold, then the estimators determined by OLS will have a number of desirable properties, and are known as Best Linear Unbiased Estimators. Therefore, for the purpose of this study, diagnostic tests will be performed to ensure whether the assumptions of the CLRM are violated or not violated in the model.

3.5 MODEL SPECIFICATIONS

The study used two models; the first model includes cash conversion cycle, liquidity, size of the banks, credit risk and efficiency. The second model incorporates the components of cash conversion cycle; debtors' collection period and creditors' payment period, and other variables liquidity, size of the banks, credit risk and efficiency. The reason for using two models is cash conversion cycle and the two components of cash conversion cycle (DCP and CPP) are not regressed together. The study then estimated the determinant of profitability by using the ordinary least squares (OLS).

Therefore, from Rahman and Nasr, (2007), the study could adopt

$$\boldsymbol{ROA}it = \boldsymbol{\beta}_0 + \sum_{i=1}^{n} \boldsymbol{\beta}_1 \boldsymbol{X}it + \boldsymbol{\varepsilon} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(1)}$$

Where

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

$\boldsymbol{\beta}_0$ = the intercept of equation

$\boldsymbol{\beta}_1$ = Coefficient of X it variables

$\boldsymbol{X}it$ = the different independent variables of firm i at time t.

t = Time from 1, 2… years and $\boldsymbol{\varepsilon}$ =Error term

Finally, the above general least square model is converted into specified variables as follows;

$$ROA = \beta_0 + \beta_1 CCC + \beta_2 L + \beta_3 SOB + \beta_4 CR + \beta_5 E + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(2)}$$

$$ROA = \beta_0 + \beta_1 DCP + \beta_2 CCP + \beta_3 L + \beta_4 SOB + \beta_5 CR + \beta_6 E + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots \textbf{(3)}$$

Whereas;

ROA= Represents Return on Asset

β = Represents intercept

CCC= Represents cash conversion cycle

DCP=Represents debtors collection period

CCP= Represents creditors payment period

L = Represents liquidity

SOB=Represents size of the bank

CR=Represents credit risk

E = Represents efficiency

ε = Error term

Equations (2) stated to include CCC while equation (3) included the components of the CCC (CPP and DCP) as the independent variables.

3.6 DESCRIPTION OF VARIABLES

In this study, the choice of explanatory variables has been based on alternative theories related to working capital management and profitability and additional variables that were used in previous studies. The variable used in this study is based on the line as applied in previous research regarding the relationship between working capital management and profitability. These variables are categorized as dependent, independent and control variables.

3.6.1 DEPENDENT VARIABLE

ROA is a widely used financial tool to determine the level and intensity of returns that a firm has generated by employing its total assets. Firms are usually considered well off when they generate returns that can attract further investors and lenders, and in trouble if they need to raise the finance required for growth or capital needs, or if their ROA does not convince financiers. ROA reflects the earnings generated by the capital invested, and is calculated as follows:

ROA = Operating income before tax/total assets

In this study, ROA was used as dependent variable. ROA has been used by (Samiloglu and Demirgunes, 2008; Sharma and Kumar, 2011; Mogaka and Jagongo, 2013). The return on assets determines the management efficiency to use assets generates earnings. It is a better measure since it relates the profitability of the company to asset base (Padachi, 2006).

3.6.2 INDEPENDENT VARIABLES

The explanatory variables used in this as proxies of liquidity are (1) Cash conversion cycle, (2) Debtors collection period, (3) Creditors payment period, and (4) Liquidity/Current ratio.
The description of how the variables are measured and computed is explained below.

Cash Conversion Cycle (CCC)

Brigham & Houston (2003) defined the Cash Conversion Cycle (CCC) as the length of time funds are tied up in working capital, or the length of time between paying for working capital and collecting cash from the sale of the working capital. The cash conversion cycle is a measure of the efficiency of working capital management as it indicates how quickly current assets are converted into cash (Brigham and Houston, 2007).
In this study it is measured as follows:

Cash Conversion Cycle (CCC) = Debtors Collection period (DCP)-Creditors payment period (CPP)

The two components of Cash conversion cycle are specified below.

Debtors Collection period (DCP)

All efforts the financial manager makes in setting credit standard, credit terms and credit collection periods are geared towards establishing an optimal credit policy for the firm. An optimal credit policy is one which maximizes a firm's value, and it is a point where Pandey (2005) assets that the incremental or marginal rate of return of an investment is equal to the incremental or marginal cost of funds used to finance that investment.
In these study debtors collection period is calculated as follows:

Debtors Collection period (DCP) = (Bank current asset/Interest income)*365

Creditors' payment period (CPP)

Accounts payables are largely dependent on the firm's purchases which, in turn, will depend on the volume of production. Thus, a decision as to whether to take trade discount or not, or to stretch accounts payables or not, should be based on the cost and benefits analysis of a firm's credit policy in relation to profitability and or liquidity of the enterprise.

In this study creditors payment period is calculated as follows:

Creditors payment period (CPP) = (Loan/Interest expense) *365

Liquidity (L)

Liquidity used as measurement of profitability and calculated by the following equation. Liquidity is the amount of short term responsibilities that could be met with the amount of liquid assets.

Liquidity (L) = Loan /Customer deposits

3.6.3 CONTROL VARIABLES

In order to have a reliable analysis of the impact of working capital management on profitability of the firms, it is common in working capital literature to use some control variables which brought impacts on firm's profitability. The control variables used in the study are:

Size of banks(SOB);is used to capture the fact that larger banks are better placed than smaller banks in harnessing economies of scale in transactions to the plain effect that they will tend to enjoy a higher level of profits. In most of the finance literature, natural logarithms of total assets of the banks are used as a proxy for bank size. So natural logarithm of total asset was used as proxy.

Credit risk (CR); provision for doubtful debts to total loan, is control variable and it is chosen because it is an indicator of credit risk management. Provision for doubtful debts, in particular, indicates how banks manage their credit risk because it defines the proportion of loan losses amount in relation to Total Loan amount (Hosna *et al.*, 2009).

Efficiency (E): Efficiency means the per unit income generated. Efficiency measures that how much it is expensive for the private commercial banks to produce per unit of output. High total cost to total income ratio causes the lower profitability for the banks and low of the ratio shows the increase in the profit. It has been used as control variable in this study and calculated by the following formula.

Efficiency = Non -interest expense/Net income

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

This chapter is divided into four sections. The first section provides test of the normality of data, the second section presents descriptive analysis of the data and variables of the study; the third section discusses the correlation analysis between dependent and independent variables and test followed by testing the hypothesis in the fourth section.

4.1 TEST RESULTS FOR THE CLASSICAL LINEAR REGRESSION MODEL ASSUMPTIONS

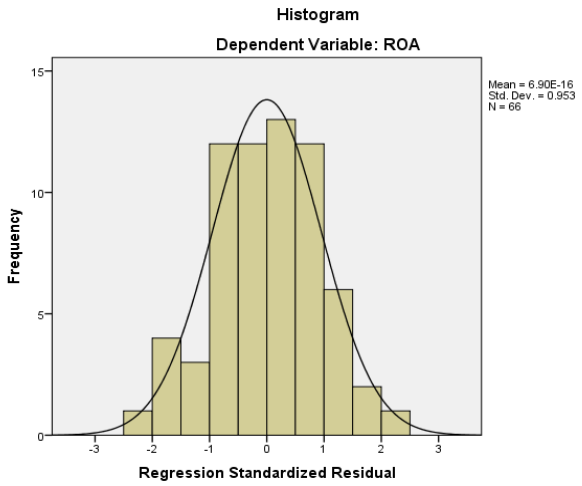
In this study as mentioned in chapter three diagnostic tests were carried out to ensure that the data fits the basic assumptions of classical linear regression model. Consequently, the results for model misspecification tests are presented as follows:

4.1.1 NORMALITY OF DATA

According to Gujarati (1995) before running regression analysis, it should be noted that there are four classic assumptions in undertaking the regression analysis and one of them is normality of data. Therefore, normality test becomes relevant. Brooks. C (2008) also noted that in order to conduct hypothesis test about the model parameter, the normality assumption must be fulfilled. The normality assumption is about the mean of the residuals is zero. Therefore, the researcher used graphical methods of testing the normality of data as shown below. The normality test is conducted for both models below.

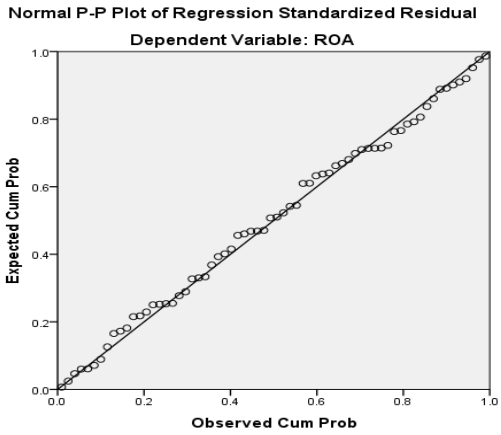
Normality test for model 1

Figure 2: Histogram



Source: SPSS output from financial statements of banks, and own computation, 2017

Figure 3: Normal P-Plot of regression standardized residual model 1



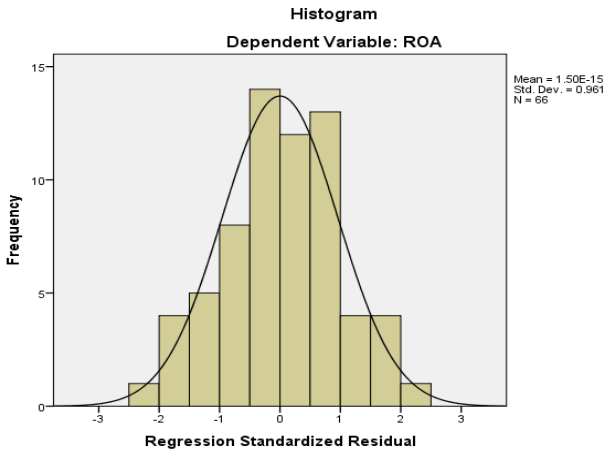
Source: SPSS output from financial statements of banks, and own computation, 2017

A-dependent variable; ROA

B-independent variables; DCP, CPP, L, SOB, CR, E

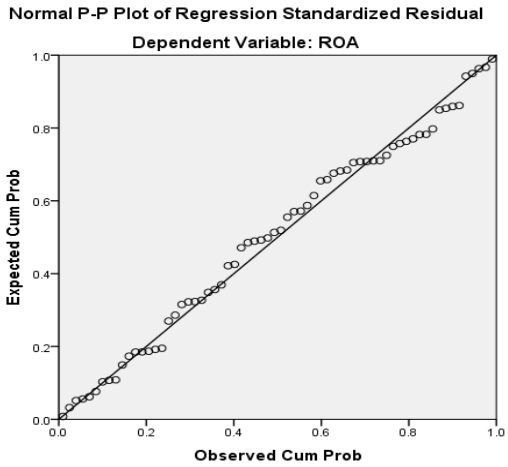
Normality test for model 2

Figure 3: Histogram



Source: SPSS output from financial statements of banks, and own computation, 2017

Figure 4: Normal P-Plot of regression standardized residual model 2



Source: SPSS output from financial statements of banks, and own computation, 2017

a- Dependent variable; ROA

b- Independent variables; CCC, L, SOB, CR, E

For both models, if the residuals are normally distributed around its mean of zero the histogram is a bell-shaped. The shape of the histogram for both models as shown above in figure revealed that the residuals are normally distributed around its mean of zero.

Similarly, the above figure shows the normal distribution of residuals around its mean of zero. Hence the normality assumption is fulfilled as required based on the above two figures, it is possible to conclude that the inferences that the researcher will made about the population parameter from the sample is somewhat valid.

4.1.2 TEST FOR HETROSCEDASTICITY

In this study as shown in table 4.1, the F-statistic result shows that there is no evidence for the presence of heteroscedasticity, since the p-values were in excess of 0.05 and the F statics value is greater than zero, there is no evidence for the presence of heteroscedasticity problem, since the p-value was considerably in excess of 0.05.

Table4.1: Test for Hetroscedasticity

ANOVA[a]

Model 1		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	5	.000	.659	.656[b]
	Residual	.000	60	.000		
	Total	.000	65			

a. Dependent Variable: AbsUt

b. Predictors: (Constant), CCC, E, L, CR, SOB

Source: SPSS output from financial statements of banks, and own computation, 2017

ANOVA[a]

Model 2		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	6	.000	.548	.769[b]
	Residual	.000	59	.000		
	Total	.000	65			

a. Dependent Variable: AbsUt

b. Predictors: (Constant), CPP, DCP, SOB, E, L, CR

4.1.3. TEST FOR AUTOCORRELATION

This is an assumption that the errors are linearly independent of one another (uncorrelated with one another). If the errors are correlated with one another, it would be stated that they are auto correlated. To test for the existence of autocorrelation or not, the popular Durbin-Watson test was employed. According to Brooks (2008), autocorrelation value near 2 indicates non - existence of autocorrelation (though there is a no sign of autocorrelation it is not worrisome). On the other hand, a value near to zero indicates positive autocorrelation, and a value near to 4 indicates negative autocorrelation. As it can be observed from Table 4.5 In regression section, the DW statistic result is seen to be 1.81 (near 2).

4.1.4 TEST FOR MULTICOLLINEARITY

An implicit assumption that is made when using the OLS estimation method is that the explanatory variables are not correlated with one another (Brooks, 2008). If there is no relationship between the explanatory variables, they would be said to be orthogonal to one another. If the explanatory variables were orthogonal to one another, adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change. According to Brooks, 2008, in any practical context, the correlation between explanatory variables will be non-zero, although this will generally be relatively being in the sense that a small degree of association between explanatory variables will almost always occur but will not cause too much loss of precision. However, a problem occurs when the explanatory variables are very highly correlated with each other, and this problem is known as multicollinearity. Furthermore, a high correlation between variables may indicate the presence of

multicollinearity (Saunders et al. 2003; Anderson et al. 2007). Field (2005) suggests that multicollinearity becomes a problem only when the correlation coefficient exceeds 0.80. So the purpose of checking for multicollinearity is because it leads to misspecification of test results of the regression.

Table4.2: Test of Multicollinearity

Variables	DCP	CPP	CCC	L	SOB	CR	E
DCP	**1**						
CPP	**0.733**	**1**					
CCC	**-0.576**	**-0.789**	**1**				
L	**0.688**	**0.426**	**-0.302**	**1**			
SOB	**-0.681**	**-0.708**	**0.604**	**-0.712**	**1**		
CR	**0.496**	**0.448**	**-0.387**	**0.242**	**-0.555**	**1**	
E	**-0.176**	**-0.214**	**0.0204**	**-0.007**	**0.060**	**0.068**	**1**

Source: SPSS output from financial statements of banks, and own computation, 2017

In this particular case, the largest observed Correlation for the independent variables of return on asset is -0.789between CCC and CPP and CPP and DCP which is 0.733 and thus, this is sufficiently small as compared to the tolerable correlation sated for this particular study which is 0.8 (80percent) coefficient (Gujarati, 2004).

Therefore, based on this statistics there is no multicolinearity for the models.

4.2 DESCRIPTIVE STATISTICS

This part presents the result based on the descriptive statistics of both the dependent and independent variables which are described under the following sections. Table 4.3 below which, presents descriptive statistics for 6 private commercial banks in Ethiopia for a period of eleven years from 2005 to 2015. Key figures, including mean, standard deviation, minimum and maximum value were reported. This was generated to give overall description about data used in the model and served as data screening tool to spot unreasonable figure.

Table4.3: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	66	0.0051	0.057	0.039	0.01
DCP	66	2516.02	5161.40	3666.32	743.59
CPP	66	10503.38	21702.69	15011.44	2926.82
CCC	66	-18329.15	-7464.25	-11345.11	2434.52
L	66	0.49	1.01	0.67	0.13
SOB	66	20.79	23.93	22.58	0.74
CR	66	0.00	0.09	0.03	0.01
E	66	0.54	2.30	1.02	0.37
Valid N	66				

Source: SPSS output from financial statements of banks, and own computation, 2017

Based on, Table 4. 3. For the total sample, the mean of ROA was 4% with a minimum of 0.5% and a maximum of 5.7%. That means, the most profitable bank among the sampled banks earned 5.7 cents of profit before tax for a single birr invested in the assets of the firm. On the other hand, the least profitable bank of the sampled banks earned 0.05 cents of profit before tax for each birr invested in the assets of the firm. The standard deviation statistics for ROA was 0.0087 which indicates that the profitability variation between the selected banks was very small. The result implies that these banks are optimizing their return from the use of their assets.

The above table indicates also from the sampled Ethiopian private banks to have a minimum debtors' collection period of 2516 days and maximum of 5161 days with an average of 3666, which is equivalent to 10 years on 365 day cycle. This implies that private commercial banks take longer collection period to collect their receivables. Private commercial banks also minimum of10503 days and maximum of 21702 days of creditors' payment period. The average creditors' payment period is 15011 days equivalent to 41 years on 365 day cycle. Based on the finding private commercial banks have advantage of long term credit from their customers.

Sample of Ethiopian private banks appeared to have a minimum of cash conversion cycle of -18329 days and maximum of-7464 days. The average cash conversion cycle is -11345 days equivalent to about 31years on a 365-day cycle. This lends support to the much accepted view that most banks are highly levered. To check the liquidity of the private commercial banks, a traditional measure of liquidity (current ratio) is used. The average current ratio for Ethiopian private commercial banks is 67% with a standard deviation of 13.2%. The highest current ratio for a company bank in a particular year is 101% and in the same way the minimum ratio for a bank in a year is 48.9%.

The size of the firm and its relationship with profitability, natural logarithm of assets is used as a control variable. From table 4.1 above one can see that the mean value of log of sales is 22.57and standard deviation of 0.743the maximum value of log of assets for a bank in a year is 23.933while the minimum value is 20.794.

On the other hand CR (Provision for Doubtful Debts to total loan) ratio has the mean of 3.2% for the study period. Credit risk shows the minimum value of 0% and a maximum value of 9.8%. Credit risk has experienced standard deviation equal to 1.9% which shows the existence of relatively higher variation of Provision for Doubtful Debts to total loan ratio between the selected banks compared to the variation in ROA.

Furthermore, another interesting observation is that there was somewhat a higher variation in the E (cost-to-income) ratio indicated by the range between 53.85% and 230%. The mean of the cost-to-income ratio equals 102.88%. The relatively higher range between the minimum and maximum value implies that the most efficient bank has a quite substantial cost advantage compared to the least efficient bank. Cost efficiency (cost management) has experienced standard deviation equal to 37% which shows the existence of relatively higher variation of cost to income ratio between the selected banks.

4.3 RESULTS AND ANALYSIS FOR PEARSON'S CORRELATION COEFFICIENT

Pearson's Correlation analysis, which is also known as bivariate correlations, has been performed in order to determine and identify if there is any significant strong relationship between the independent and dependent variables such as the liquidity components and control variables towards the profitability of firms measured by ROA under private commercial banks. The summary of the Pearson's correlation matrix is presented in Table 4.4 below.

Table4.4: Correlations

	ROA	DCP	CPP	CCC	L	SOB	CR	E
ROA	1							
DCP	-0.073	1						
CPP	0.169	0.733	1					
CCC	-0.226	-0.576	-0.789	1				
L	0.066	0.688	0.426	-0.302	1			
SOB	0.046	-0.681	-0.708	0.604	-0.712	1		
CR	-0.138	0.496	0.448	-0.387	0.242	-0.555	1	
E	-0.822	-0.176	-0.214	0.204	-0.007	0.060	0.068	1

Source: SPSS output from financial statements of banks, and own computation, 2017

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

Table4.4. Shows negative correlation coefficient between debtors' collection period and profitability measures, i.e. return on asset. From the table, one cane notices that correlation coefficient of debtors' collection period with ROA is-7.3%. It indicates that the shorter debtors' collection period are associated with high profitability and/or longer debtors' collection period is

associated with lower profitability. Creditors' payment period is positively correlated with ROA, which indicates when the private bank's amount of credit is increase, profitability (ROA) also increases. Cash conversion cycle is negatively correlated with ROA, which implies when firms period of cash conversion cycle is longer, profitability (ROA) is negatively affected.

Liquidity is positively correlated with profitability (ROA), which indicates when private commercial banks are more liquid or strong to pay their short term responsibilities; their profitability is positively affected by liquidity.

The cost efficiency (cost management) was the most negatively correlated variable with ROA. This correlation clearly shows that, as non interest expense increase profitability (ROA) move to opposite direction. On the other hand credit risk is negatively correlated with the profitability measure, indicating that, when the amount of provision for doubtful debts increase, profitability moves to the opposite direction. Size (natural Log of assets) of banks also positively correlated with profitability (ROA). This shows when the size (Asset) of banks is increased; profitability is positively affected because of economy of scale.

4.4 RESULTS OF REGRESSION ANALYSIS

This section presents the empirical findings from the econometric results on the effect of liquidity on the profitability of private commercial banks in Ethiopia. The section covers the empirical regression model used in this study and the results of the regression analysis.

Empirical model: As presented in the third chapter the empirical model used in the study in order to examine the effect of liquidity on the profitability of Ethiopian private commercial banks was provided as follows: the following two models are regressed separately because the first model incorporates the two components of CCC; DCP and CPP, and this two variables were not regressed with CCC since CCC is the difference of the two variables and it's not allowed regressing similar variables in one model.

$$ROA = \beta_0 + \beta_1 CCC + \beta_2 L + \beta_3 SOB + \beta_4 CR + \beta_5 E + \varepsilon \ldots\ldots\ldots\ldots 1$$

$$ROA = \beta_0 + \beta_1 DCP + \beta_2 CCP + \beta_3 L + \beta_4 SOB + \beta_5 CR + \beta_6 E + \varepsilon \ldots\ldots 2$$

Table4.5: OLS Results (with CCC)

Model 1	Coefficients		t	sig
	B	Std. Error		
(Constant)	-0.003	0.043	-0.068	0.946
CCC	-7.21E-07	0	-2.184	0.033**
L	0.002	0.007	0.226	0.822
SOB	0.002	0.002	1.441	0.155
CR	-0.026	0.04	-0.651	0.517
E	-0.019	0.002	-10.958	.000***
R	0.843			
R Square	0.71			
Adjusted R square	0.686			
Std. error of the estimate	0.00492			
F statistic	29.364			
Prob(F-statistic)	0.00			
Durbin-Watson	1.81			
ROA=-0.003-0.000000721CCC+0.002L+0.002SOB-0.026CR-0.019E+0.843R				

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

Source: SPSS output from financial statements of banks, and own computation, 2017

Table 4.5 reveals the summary statistics of regression model 1, which used cash conversion cycle. The explanatory power of the model as can be seen is that the R and R squared values are equal to 84.3% and 71%respectively. This implies that 68.6 percent of the variation in the return on assets can be explained by the variables used in the model. The remaining 31.4% of changes was explained by other factors which are not included in the model. Thus these variables collectively, are good explanatory variables of the effect of working capital management on the profitability of private commercial banks in Ethiopia. The F statistic is used to test the model specification. From the table 4.6 the result of one can see that the model is fit with F statistics 29.364 at p-value of 0.0000.

On the other hand, liquidity and size had positive relationship with profit with coefficient of 0.002and 0.002 respectively. This revealed that there was a direct relationship between the above two independent variables and ROA. Variables like cash conversion cycle, credit risk and efficiency had negative relationship with profitability as far as their respective coefficients were-0.00000712, -0.026 and -0.019 .This revealed that there was inverse relationship between the above three independent variables and ROA. In general as per the regression results provided in table 4.6 among the 5 regressors used in this study 2 of them were significant.

Table4.6: OLS Results (with the Components of the CCC)

Model 2	Coefficients		t	Sig.
	B	Std. Error		
(Constant)	0.071	0.039	1.827	0.073*
DCP	-7.74E-06	0	-5.461	0.000***
CPP	1.04E-06	0	3.644	0.001***
L	0.014	0.006	2.145	0.036**
SOB	0	0.001	-0.227	0.822
CR	0.011	0.034	0.333	0.74
E	-0.02	0.001	-13.82	0.000***
R	0.893			
R Square	0.797			
Adjusted R square	0.777			
Std. error of the estimate	0.00413			
F statistic	38.715			
Prob(F-statistic)	0.000			
Durbin-Watson	1.87			
ROA=0.071-0.000000774DCP+0.000000104CPP+0.014L+0.011CR-0.02E+0.893R				

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

Source: SPSS output from financial statements of banks, and own computation, 2017

Table 4.6 used the two components of cash conversion cycle, debtors' collection period and creditors' payment period. From the table, the explanatory power of the model R and R square is 89.3% and 79.7%respectively. Based on the result 77.7% of the independent variables explained the dependent variable which is ROA. The remaining 22.3% variables are not included in the model. The F statistic is used to test the model specification. From the table 4.6 the result of one can see that the model is fit with F statistics 38.715at p-value of 0.0000.

Variables like debtors' collection period and efficiency, which had a negative relationship with ROA with values of-0.00000746 and -0.02 respectively. This indicates that there was an inverse relationship between the aforementioned two independent variables and ROA. Thus the increase of those variables will lead to a decrease in ROA. The other variables had positive relationship with profitability (ROA) with values of 0.0000146, 0.014 and 0.011 for creditors' payment period, liquidity and credit risk respectively. Based on table 4.6 size had no relationship with profitability.

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

4.6 HYPOTHESIS TEST

4.6.1 DEBTORS COLLECTION PERIOD AND PROFITABILITY (ROA)

The first hypothesis examined the relationship between debtors' collection period, which is measured by the total loans to interest income in 365 days, and the profitability of private commercial banks. Based on regression result, debtors' collection period has significant negative relationship with profit, with beta coefficient of -0.00000746 and significant level of P (0.000). Because of this debtors' collection period has strong significant negative relationship with profit of private commercial banks and the results are consistent with earlier studies of Benjamin Y. and Samuel K. (2012). However, the studies conducted by Damilola (2005) and Lazaridis and Tryfonidis (2005) opines that the purpose of offering credit is to maximize profits and similarly, maintain that credit periods whether from suppliers or granted to customers, in most cases, have

a positive impact on profitability. The results from regression model specification 2 are used to determined hypothesis stated in chapter one as shown in 1.4 section. The first research hypothesis was there is a significant negative relationship between debtors' collection period and profitability of private commercial banks. In conformity with hypothesis, the indicator of profitability, return on assets is negatively and significantly related with debtors' collection period at 1% level. Therefore, the hypothesis is not rejected and can be conclude that hypothesis one is true.

4.6.2 CREDITORS PAYMENT PERIOD AND PROFITABILITY (ROA)

The coefficient of creditors payment period, which is measured by the deposit to interest expense in 365 days ratio was positive and statistically significant with beta coefficient of 0.0000146(p-value=0.001) and verify the hypotheses that current liabilities of the bank are positively related to banks' profitability. The finding was also consistent with previous studies of Benjamin Y. and Samuel K. (2012). The results from regression model specification 2 are used to determined hypothesis stated in chapter one as shown in 1.4 section. The second research hypothesis was there is a significant positive relationship between creditors' payment period and profitability of private commercial banks. In conformity with hypothesis, the indicator of profitability, return on assets is positively and significantly related with creditors' payment period at 1% level. Therefore, the hypothesis will be accepted as creditors' payment period is positively related with return on asset.

4.6.3 CASH CONVERSION CYCLE AND PROFITABILITY (ROA)

The third hypothesis examined the relationship between cash conversion cycle, which is the difference between debtors' collection period and creditors' payment period and the profitability of private commercial Banks. Based on the finding of the study cash conversion cycle had a beta coefficient of -0.000000721, which means cash conversion cycle and profitability of private commercial banks profitability negatively related and cash conversion cycle is statically significant p (0.033). The finding was also consistent with previous studies of Benjamin Y. and Samuel K. (2012), Priya (2016), Shin and Soenen, (1998),Athens, Lazaridis and Tryfondis (2005). The third research hypothesis was there is a significant negative relationship between cash conversion cycle and profitability of private commercial banks. In conformity with the third

hypothesis, the indicator of profitability, return on assets is negatively and significantly related with cash conversion cycle at 5% level. Therefore, the hypothesis is confirmed and can be conclude that hypothesis four is true.

4.6.4 LIQUIDITY AND PROFITABILTY (ROA)

Another important variable that was examined in this study is measure of liquidity, i.e., current ratio, is significant positively related in model 2 with the return on assets , and the results are consistent with earlier studies of Dang(2011), Bourke (1989), and Kosmidou *et al*. (2005). The regression result for liquidity (L) implies a unit increase in current ratio is associated with an increase in 1.4% and statistically significant p (0.036). The possible reason of positive association of current ratio with profitability of the private commercial banks is mainly due to the banks practice and reliance on self-finance and financial intermediaries. But according to model1liquidity is not significant, so this implies that liquidity has no any influence on profitability. The fourth research hypothesis was there is a significant positive relationship between liquidity and profitability of private commercial banks. In conformity with hypothesis, the indicator of profitability, return on assets is positively and significantly related with liquidity at 5% level for the second model but it's insignificant in the first model. Therefore, the hypothesis will be neither accepted nor rejected, its neutral based on the finding.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This chapter deals with the conclusions and recommendations based on the findings of the study. Accordingly this chapter is organized into two sub-sections. Section 5.1 presents the conclusions and section 5.2 present the recommendations.

5.1 CONCLUSIONS

The management of working capital is one of the most important financial decisions of a firm. The ability of the firm to operate for longer durations depends on a proper trade-off between management of investment in long-term and short-term funds (working capital).Firms can achieve optimal management of working capital by making the trade-off between profitability and liquidity. It is necessary for a firm to monitor its working capital properly and maintain its balance at the appropriate level. Shortage of working capital may lead to lack of liquidity as well as loss of production and sales; on the contrary, excess balance of working capital could be seen as loss of investment opportunities.

The main objective of this study was to examine the effect of working capital management on the profitability of private commercial banks in Ethiopia. By considering the nature and objective of the research, a quantitative research approach was adopted. To collect the necessary data the study used survey of documents (structured review of financial records). The collected data from a sample size of six private commercial banks over the period of 2005 to 2015were analyzed using descriptive statistics, correlation matrix and OLS regression analysis. The analyses were made in accordance to the stated hypotheses formulated in the study.

In order to conduct the empirical analysis, one dependent variable (profitability measured by ROA), and independent variables were selected; cash conversion cycle, debtors collection period, creditors payment period, liquidity, while control variables like credit risk, efficiency, and size of banks also used . The variables were selected by refereeing different theories and empirical studies that have been conducted on working capital management and private

commercial banks profitability. Consequently, the empirical findings of this particular study suggested the following conclusions:

First, the coefficient of the constant term is positive and statistically insignificant. The positive coefficient of constant term which represents economies of scale suggests that private commercial banks in Ethiopia during the study period earn net positive income from off-balance sheet activities. That means that these banks enjoy increasing returns to scale in their operation.

Second, the regression analyses of the number of day's debtors' collection period indicate that there is a significant negative relation at 1 percent level between these days and private commercial banks profitability. This means that the shorter the bank's debtors' collection period, the higher the profitability and vice versa. Therefore, private commercial banks can increase their profitability by reducing the debtors' collection period as much as possible.

Third, the regression analyses of creditors' payment period indicate that there is a significant positive relation at 1 percent level between these days and private commercial banks profitability. This means that the longer the bank's creditors' payment period, the higher the profitability and vice versa. This can be described as the longer a firm delays its payments to its creditors, can increases profitability.

Fourth, the regression analyses of cash conversion cycle indicate that there is a significant negative relation at 5 percent level between this cycle and private commercial banks profitability. This means that the shorter the bank's cash conversion cycle, the higher the profitability and vice versa. The negative relationship between debtors' collection period and profitability suggests that high profitable private commercial banks pursued an increase of their debtors' collection period in an attempt to increase their cash gap in the cash conversion cycle. Similarly, the positive relationship between creditors' payment period and profitability shows that when banks delay their payments they earn more profits. This is quite consistent with what theory stipulates. If the firm is able to extend the time period of its payment and reduce the creditors' payment period, then it injects these funds into their working capital position to go a long to increase its profitability.

Therefore, private commercial banks of Ethiopia can increase their profitability by making lower length of cash conversion cycle and keeping each different component (debtors' collection period and creditors' payment period) to the optimal level.

Finally, the regression analyses of liquidity indicate that there is a significant positive relation at 5 percent level with the profitability of private commercial banks, which was measured by loan amount to deposit. This indicates private commercial banks are fulfilling demands of their depositors and this increases their profitability.

5.2 RECOMMENDATIONS

The recommendations of the research were premised on the summary of and conclusions from the results and discussion. The study has shown a clear understanding of liquidity and its impact on profitability of private commercial banks in Ethiopia. In order to improve private commercial banks performance, efficient management of liquidity is necessary. Therefore, the researcher recommends the following points based on the study findings.

i. The negative relationship between private commercial banks' financial performance and debtors collection period increases banks' profitability when there is high collection of accounts receivable. The result of the study shows whenever the average collection period of the private commercial banks decreases, profitability increases. Therefore the researcher suggests to the credit department or policy makers of the private commercial banks to control their receivable in optimal way. The researcher further recommended that private commercial banks should engage in relationship with those customers who allow short payment period by considering taking into account not to lose customers who delay payments.
ii. The study also found positive relationship between creditors' payment period and private commercial banks' profitability. It indicates that whenever private commercial banks wait longer to pay their account payables, it increases profitability. Therefore, the researcher recommended that private commercial banks should consider the terms of creditors payment period to be longer to have an impact on profitability.

iii. The study also found that cash conversion cycle has a negative relationship with private commercial banks' profitability. Therefore, regarding the CCC, the researcher recommended that lowering working capital cycle as a measure of efficient working capital management is the one to be appraised.

iv. The study found that liquidity has a positive relationship with the profitability of private commercial banks. So, the researcher recommends that private commercial banks should focus the efficient and proper management of liquidity, since being too much liquid by itself has an impact which indicates there is cash which is not invested and this will affect their profitability negatively. So, efficient management of liquidity will not only improve bank profitability but it will also enable banks meet their short term obligations as they fall due.

Finally, there is need for further studies to carry out on the impact of working capital management on profitability of banks by incorporating more working capital variables that affects profitability. This study focused only on the relation between working capital management and profitability measured as ROA. There are also other measures of profitability, ROI, GOP, ROE to consider for further study and future researcher could increase the number of observations by increasing the sample size and extending the period of time with unbalanced data.

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APPENDIXES

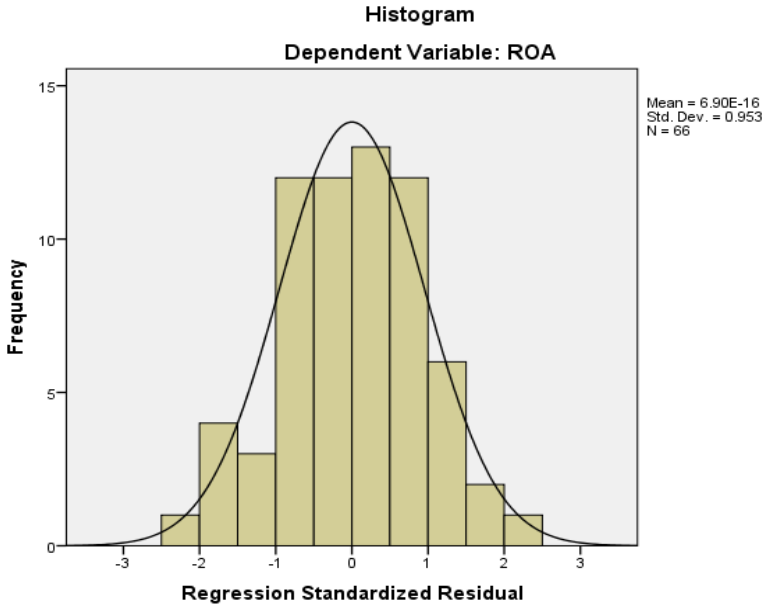
APPENDIX –I

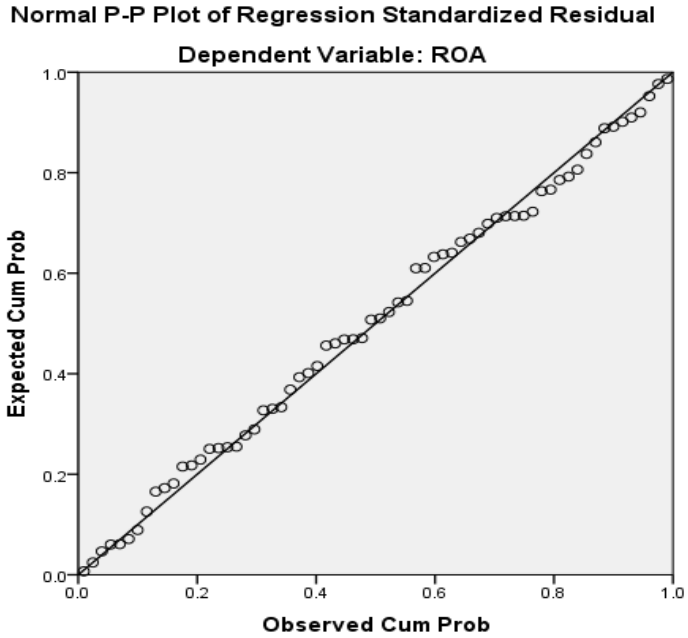
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	66	0.0051	0.0568	0.039382	0.0087635
DCP	66	2516.0253	5161.4085	3666.328479	743.5953080
CPP	66	10503.3825	21702.6988	15011.441511	2926.8257589
CCC	66	-18329.1534	-7464.2519	-11345.113030	2434.5191913
L	66	0.4885	1.0158	0.668924	0.1313375
SOB	66	20.7937	23.9327	22.579986	0.7438962
CR	66	0.0000	0.0983	0.032726	0.0194108
E	66	0.5385	2.3031	1.028856	0.3709179
Valid N	66				

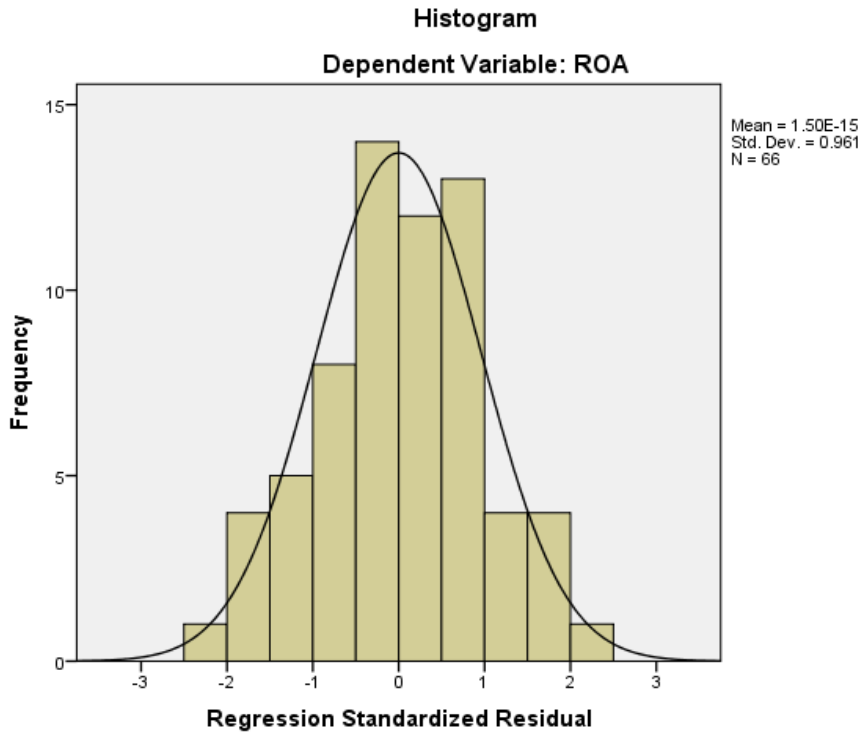
APPENDIX -II

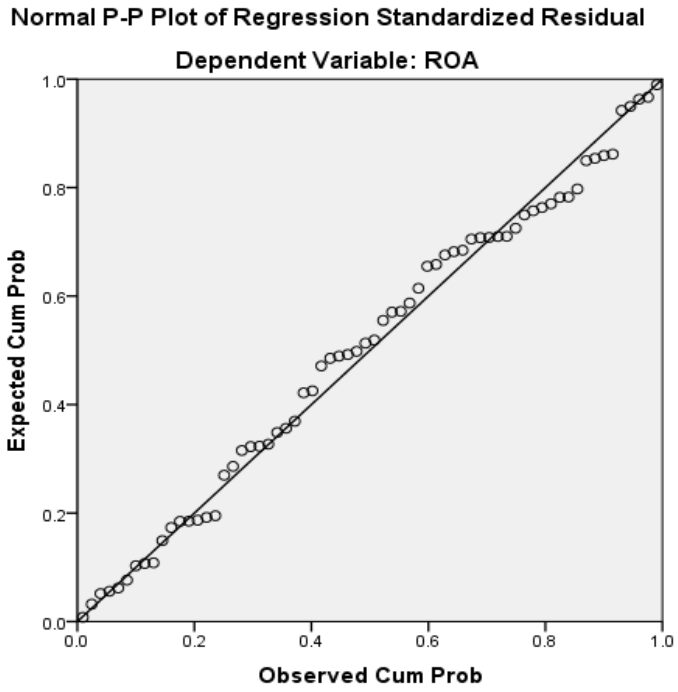
TEST FOR NORMALITY OF THE DATA MODEL 1





TEST FOR NORMALITY OF THE DATA MODEL 2





TESTS FOR HETEROSKEDASTICITY TEST

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	5	.000	.659	.656[b]
	Residual	.000	60	.000		
	Total	.000	65			

a. Dependent Variable: AbsUt

b. Predictors: (Constant), CCC, E, L, CR, SOB

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	6	.000	.548	.769[b]
	Residual	.000	59	.000		
	Total	.000	65			

a. Dependent Variable: AbsUt

b. Predictors: (Constant), CPP, DCP, SOB, E, L, CR

APPENDIX –III

PEARSON CORRELATION

Correlations

		ROA	DCP	CPP	CCC	L	SOB	CR	E
ROA	Pearson Correlation	1	-.073	.169	-.226	.066	.046	-.138	-.822**
	Sig. (2-tailed)		.559	.175	.068	.599	.712	.269	.000
	N	66	66	66	66	66	66	66	66
DCP	Pearson Correlation	-.073	1	.733**	-.576**	.688**	-.681**	.496**	-.176
	Sig. (2-tailed)	.559		.000	.000	.000	.000	.000	.157
	N	66	66	66	66	66	66	66	66
CPP	Pearson Correlation	.169	.733**	1	-.789**	.426**	-.708**	.448**	-.214
	Sig. (2-tailed)	.175	.000		.000	.000	.000	.000	.084
	N	66	66	66	66	66	66	66	66
CCC	Pearson Correlation	-.226	-.576**	-.789**	1	-.302*	.604**	-.387**	.204
	Sig. (2-tailed)	.068	.000	.000		.014	.000	.001	.101
	N	66	66	66	66	66	66	66	66
L	Pearson Correlation	.066	.688**	.426**	-.302*	1	-.712**	.242	-.007
	Sig. (2-tailed)	.599	.000	.000	.014		.000	.051	.954
	N	66	66	66	66	66	66	66	66
SOB	Pearson Correlation	.046	-.681**	-.708**	.604**	-.712**	1	-.555**	.060
	Sig. (2-tailed)	.712	.000	.000	.000	.000		.000	.635
	N	66	66	66	66	66	66	66	66
CR	Pearson Correlation	-.138	.496**	.448**	-.387**	.242	-.555**	1	.068
	Sig. (2-tailed)	.269	.000	.000	.001	.051	.000		.590
	N	66	66	66	66	66	66	66	66
E	Pearson Correlation	-.822**	-.176	-.214	.204	-.007	.060	.068	1
	Sig. (2-tailed)	.000	.157	.084	.101	.954	.635	.590	
	N	66	66	66	66	66	66	66	66

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

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

APPENDIX -IV

REGRESSION RESULT MODEL 1

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.843[a]	.710	.686	.0049129	1.806

a. Predictors: (Constant), E, L, CR, CCC, SOB

b. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.004	5	.001	29.364	.000[b]
	Residual	.001	60	.000		
	Total	.005	65			

a. Dependent Variable: ROA

b. Predictors: (Constant), E, L, CR, CCC, SOB

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.003	.043		-.068	.946		
	CCC	-7.207E-07	.000	-.200	-2.184	.033	.575	1.738
	L	.002	.007	.024	.226	.822	.437	2.290
	SOB	.002	.002	.200	1.441	.155	.252	3.964
	CR	-.026	.040	-.057	-.651	.517	.630	1.587
	E	-.019	.002	-.789	-10.958	.000	.932	1.073

a. Dependent Variable: ROA

APPENDIX –V

REGRESSION RESULT MODEL 2

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.893[a]	.797	.777	.0041397	1.868

a. Predictors: (Constant), CPP, E, L, CR, DCP, SOB

b. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.004	6	.001	38.715	.000[b]
	Residual	.001	59	.000		
	Total	.005	65			

a. Dependent Variable: ROA

b. Predictors: (Constant), CPP, E, L, CR, DCP, SOB

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.071	.039		1.827	.073		
	DCP	-7.735E-06	.000	-.656	-5.461	.000	.238	4.208
	CPP	1.039E-06	.000	.347	3.644	.001	.379	2.641
	L	.014	.006	.205	2.145	.036	.375	2.667
	SOB	.000	.001	-.028	-.227	.822	.219	4.557
	CR	.011	.034	.025	.333	.740	.601	1.664
	E	-.020	.001	-.862	-13.820	.000	.882	1.134

a. Dependent Variable: ROA

DECLARATION

I, **Yebelay Getahun**, declare that this thesis is my original work, prepared under the guidance of **Simon Tarekegn** (**Asst.Professor**). 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.

Name: Yebelay Getahun

Signature: _____

Date: _____

ENDORSEMENT

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

Name: **Simon Tarekegn** (**Assistant Professor**)

Signature: _____

Date: _____