The Effect of Working Capital Management on the Performance of Private Commercial Banks in Ethiopia

A Thesis Submitted To Addis Ababa University Faculty of Business And Economics In Partial Fulfillment of The Requirements For The Degree of Master of Science In Accounting and Finance.

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Statement of Declaration

I declare that the thesis entitled: The effect of working capital management on the performance of private commercial banks in Ethiopia the case of nine private commercial banks in Ethiopia, hereby submitted by me in partial fulfillment of the requirements for the Degree of Master of Science (Accounting and Finance) at the University of Addis Ababa, is my original work and has not been submitted for any degree in any other university. I have undertaken it independently with the advice of my advisor, Alem Hagos (PhD).In performing the thesis I have used different sources and material which have been acknowledged.

Name: Gullilat Eshetu **Name: Alem Hagos (PhD)**

Signature _____ **Signature _____**

Statement of Certification

This is to certify that Gullilat Eshetu Yilma has carried out his research work on the topic entitled "The effect of working capital management on the performance of private commercial banks in Ethiopia, the case of nine private commercial banks". The work is original in nature and is suitable for submission for the award of the M.Sc. Degree in Accounting and Finance.

Name: External Examiner _____Signature _____Date_____

Name: Internal Examiner_____Signature_____ Date_____

Advisor: AlemHagos (PhD) Signature_____ Date_____

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Gullilat Eshetu Signature _____

Contents

List of Acronyms

ADD: Addis International Bank S.C

AWA: Awash International Bank S.C

ABA: Abay Bank S.C

ABY: Abysinia Bank S.C

APA: American Psychological Association

CBO: Cooperative Bank of Oromia

CLRM: Classical Linear Regression Model

NBE: National Bank Of Ethiopia

DAB:Dashen Bank S.C

ENA:Enat Bank S.C

EVA:Economic Value Added

ORM:Oromia International Bank S.C

ROE: Return on Equity

WEG: WegagenBnak S.C

WCM: Working Capital Management

Abstract

There are a number of factors that the performance of commercial banks is affected. Among these factors, the management of working capital plays a crucial role. A prudent management of working capital is also important for good performance of commercial banks. The purpose of this study is to evaluate the effect of working capital management on the performance of private commercial banks in Ethiopia. The study has used secondary data obtained from audited financial statements of nine private commercial banks in Ethiopia covering the period from 2014 to 2019.The banks were selected on convenience basis. The financial statements from the banks were analyzed to determine the effect of current ratio, bank size, debt to equity, loans and advances to total asset ratio, loans and advances to deposit ratio, loans and advances to total assets, loans and advances to deposits, current assets to total assets, current liabilities to total assets Ratios and total cost to total revenue on profitability. The researcher applied a descriptive method of research and the data was analyzed using Stata data processing package. An econometric model is applied to evaluate the effect of the independent variables over the profitability the banks performance measured in return on equity. A random effect model was employed and the result revealed that debt to equity ratio and cost to income ratios were found to have significant positive and negative impact on ROE respectively. The remaining six variables were not found significant to influence ROE at 5% level of confidence. Bank managers will have to increase ROE among others, by taking an aggressive working capital financing policy and increasing efficiency by reducing controllable costs.

Key words: current ratios, liquidity, solvency, economic value added.

Chapter One

Introduction

1.1. Background of the study

Working capital management deals with what is the appropriate amount of working capital, both in total and for each specific account, and how this working capital should be financed (Brigham &Eehrhadt,2011).

Working capital management is also explained as the management of the firm's current assets and current liabilities. Achieving an efficient working capital management ,it requires that managers and those charged with leading the firm to find right investment levels of cash, marketable securities, receivables and inventories and the appropriate level of short term financing. Many financial managers spend a large amount of time managing on current assets and current liabilities. This is because unless they do this, the day to day operation of the firm will be impaired and the organizational objectives shall not be met. For example in the absence of adequate liquid assets in place, the firm will not be able to discharge its financial obligations on time (Ayichelet(2018).

The management of the firm also look in to the factor that need be considered in managing the working capital components such as internal performance reasons; not meeting targets; when actual results differ from expectations; a changing credit environment; changing shareholder, investment and business requirements; business and economic conditions; organizational needs direction; competitive market; liquidity; seasonal influences; collections history; seasonal influences; changes in supply chain management and inventory levels; expansion; and change in short-term funding deficit(McInnes,2000).

Working capital management is the ability of firms to control effectively and efficiently the current assets and current liabilities in a manner that provides the firm with maximum return on its assets and minimizes payments for its liabilities (Makori and Jagongo ,2013).

A review done by Van Horne and Wachowicz (2004) also argued that, excessive level of current assets may have a negative effect on the firm's profitability. Whereas a low level of current assets may lead to lower level of liquidity and stock outs results in difficulties in maintaining smooth operations as cited by Ayichelet (2018).

Firm Managers devote sizable of their time and efforts for managing working capitals so that the operations of the business run effectively. It is essential for firm's to discharge its financial obligations and provide an attractive return to shareholders; it requires every day concentration & an adequate control to balance bank performance and liquidity and also that creditors serve as the major provider of external financing for companies (Bakerand Powell, 2005).

Working capital is explained as the firm's investment in short-term assets, cash, short-term securities, accounts receivable (debtors) and inventories and is called gross working capital. But the most popular concept of working capital is net working capital which is the difference between current assets and current liabilities. Current liabilities represent those claims of outsiders, which are due for payment within an accounting year and include creditor's dues, bills payable, bank overdraft and outstanding expenses whereas the components of the current assets include cash and other assets that are expected to be converted in to cash in the ordinary course of business within one year or within such longer period as constitutes the normal operating cycle of a business. Working capital is a critical component in the functioning of any business and understanding of working capital is, therefore, crucial to analyze the financial position of construction companies (Fitzgerald, 2006) cited in Beemnet(2018).

1.2. Background of the Organization

The Banking operation in Ethiopia started in 1905, with the establishment of the Bank of Abyssinia that was owned by the Ethiopian government in partnership with the National Bank of Egypt then under British rule. But a well structure banking system started to evolve starting the 1940s-after the Italian departure. A government owned bank-the State Bank of Ethiopia-was established in 1942, and a number of foreign bank branches and a private bank were operating in competition with the government owned commercial bank until they were nationalized and merged into one government owned mono-bank in 1976. The competitive banking situation that started to flourish during the 1960s and 1974s was nipped in the bud by the command system that reign over the 1974-1991 periods.

Following the change of government in 1991, and the subsequent measures taken to liberalize and reorient the economy towards a system of economy based on commercial considerations, the financial market was deregulated. A proclamation number 84/94 was

issued out to effect the deregulation and liberalization of the financial sector, and a number of private banks and insurance companies were established following the proclamation. Directives issued in subsequent years further deepen the liberalization mainly including the gradual liberalizations of the interest rate, foreign exchange determination, money market operation, etc. In the year 2018/19, there are 16 private banks operating along with two public banks, namely the Commercial Bank of Ethiopia, and the Development Bank of Ethiopia. Other financial institutions operating in the economy includes 17 insurance companies, one pension fund and about 31 Micro Finance Institutions with a business focus mainly in the rural areas but in reality concentrated in urban areas. The Development Bank of Ethiopia (DBE) is a specialized bank in project financing and is not a deposit taking institution (NBE, 2013/14),ArnaldoMauri (2010) and Birritu No. 125 January 2018.

The performance of the financial institutions in general and private commercial banks in particular is affected by a number of factors. Among the known causes impacting performance of private commercial banks, the management of working capital plays a paramount role. The theory of working capital management explains as to how the entity's working capital should be managed in achieving organizational objectives by supporting the businesses' liquidity, solvency, efficiency, profitability, and shareholder wealth maximization (Brigham, Gapenski, Ehrhardt, 1999; Gitman, 1997).

During review of empirical literature on working capital management in commercial banks of Ethiopia, I came up with the knowledge that there is a lack of research work on the subject matter on one hand and research findings done in other corners of the world on the subject matter came up with different findings which triggers the need for further research to be made on in the area. This justifies the need to make the research work

1.3. Statement of the Problem

Working capital management is a very crucial area in the field of financial management, because it involves the challenging decision on the composition of current asset and current liabilities which involves the investment and the respective financing (Mathuva, 2010).

Tobi, Osidero, & Kareem (2013) stated that the profitability of a firms mainly depend on how they manage their working capital components. Therefore, firms have to know how effectively they should manage their working capitals to ensure the financial health of their firms.

Now a day Supervisory organs tend to concentrate on the maturity structure of a bank's asset and liability rather than merely focusing on its statutory liquid asset requirement (Greuning&Bratanovic, 2009). The National bank of Ethiopia directive vividly require every bank transfer annually 25% of its annual net profit to its Legal Reserve Account until such account equals its capital. This rate is reduced to 10 % when the balance transferred to this account equals the capital of the banks. Such Holding of liquid assets reduces a bank's liquidity risk. But, holding huge liquid assets imposes an opportunity cost on the commercial banks given their low return relative to other assets. Holding further liquid asset reduces a bank's profitability (Bordeleau and Graham, 2010; Eyob 2018). The absence of secondary market in Ethiopia requires commercial banks to hold high amount of liquid assets. Worku (2006),Semu (2010) cited in Eyob (2018) indicated that the presence of excess liquidity being held by Ethiopian commercial banks. But some point holding much more liquid asset outweighed by the opportunity cost on the bank given low return.

A research made by Filbeck and Krueger (2005) stated that the success of businesses depend heavily on the ability of the financial managers to effectively manage receivables, inventory and payables .In addition, a review by Reddy and Kameswari (2004) Ayichelet (2018) explained that inefficient management of working capital leads to tying up funds in idle assets and reduces the liquidity and profitability of a company.

Several researchers, among others (Abuzayed,2012; Afza&Nazri, 2011; Deloof, 2003; Makori&Jagongo, 2013; Padachi, 2006; Mifta, 2016; Woubeshet, 2014 Ayichelet,2018) have studied Working Capital Management and its impact on firms' performance.

Niman (2015) in his study, tried to show the impact of working capital management to firm's profitability by sampling manufacturing companies in Somali Regional state of Ethiopia. The author tried to show how a proper management of working capital can impact returns to the shareholders. In the research, he pointed out that there exists a significant negative relationship between liquidity and profitability of the companies under the study.

The study made by Mifta (2016), examined the impact of working capital management on profitability of large taxpayer manufacturing share companies in Ethiopia. The author has shown in his research work that working capital components have a significant effect on firm's performance and hence the components of the working capital management need due attention by management.

It is evident that the banking industry in Ethiopian is growing and expanding both in the number of banks operating in the industry and the outreach population served. This is making the competition among the commercial banks fierce and every bank need to exhaustively use its resources to achieve better result and cop up the existing competitions in the industry.

Among the factors that determine (impact) profitability of commercial banks, the way that banks manage their working capital is of key importance per recommendations of most researches made in the sector. Having a prudent working capital management helps commercial banks in achieving good performance and reaps opportunities emanating from good working capital management and avoiding risks such as liquidity and solvency (Angelopoulos et al., 2001).

Many researchers have investigated the impact of working capital on the profitability of commercial banks across different corners of the world. During the review of such research works, it is evident from the recommendations extended by the researchers that a prudent working capital management is key for the success of business entities though still the research outcome lack consistency. Under chapter 5, the summary of previous empirical findings is shown to justify this. This lack of consistency in the research output by itself triggers extra research works to be made in the subject area to narrow the gap in research outputs found so far.

On the other hand there is a lack of similar researches in the commercial banks operating in the Ethiopian financial sector. This has also an added triggering factor to make this research.

1.4. Research Questions

The main research questions are:

1. What impact does working capital management have on profitability's of private commercial banks in Ethiopia?
2. What are the components of working capital in general and for commercial banks in particular impacting private commercial banks' performances?
3. which components of working capital management impact most for the profit abilities of the private commercial banks in general and Ethiopia's private commercial banks' case in particular?

1.5. Objectives of the Study

I. General Objective

This research work aims to investigate the impact of working capital management on the profitability of commercial banks in Ethiopia from the period 2014 to 2019 by evaluating the effect of the independent variables: current ratio, bank size, debt to equity, loans and advances to total assets, loans and advances to customer deposits, current assets to total assets, current liabilities to total assets and cost to income ratio on return on equity (ROE).

II. Specific Objectives

The study shall have the following specific objects:

1. Evaluating the effect of current ratio on the profitability of private commercial banks in Ethiopia,
2. Exploring the effect of Bank size on the bank performance of private commercial banks in Ethiopia,
3. Examining the effect of debt to equity ratio on the bank performance of private commercial banks in Ethiopia,
4. Assessing the effect of loans and advances to total assets on the bank performance of private commercial banks in Ethiopia,
5. Appraising the effect of loans and advances to customer deposits on the bank performance of private commercial banks in Ethiopia,
6. Discovering the effect of current assets to total assets on the bank performance of private commercial banks in Ethiopia,
7. Measuring the effect of current liabilities to total Assets on the bank performance of private commercial banks in Ethiopia,and
8. Evaluating the effect of cost to income Ratio on the bank performance of private commercial banks in Ethiopia.

1.6. Hypothesis

Following the research objective the discussion has covered the hypotheses on impact of Working capital management on firm's performance. In this study, the researcher attempted to test:

H1: There is a significant & negative relationship between current Ratio and the private commercial banks' performance. The study made by Ayichelet,2018; Eyob ,2019 claimed this relationship.

H2: Bank size has a significant positive effect on the private commercial banks' performance. Research results by Ephrem, 2018;,Aragaw ,2015; and Piabuo ,2016 have shown that as bank size increases, the profitability of firms increases.

H3: Debt to equity ratio has a significant &positive effect on the private commercial banks' performance. The research outputs by Ephrem ,2018 and Tufail ,2008 have concluded that the increase in the proportion of debt to equity also increases the performances of the bank improves.

H4: Loans and advances to total assets ratio has a significant &positive effect on the commercial banks performance. This Measures the percentage of assets that is tied up in loans. The higher this ratio means more of the assets are interest bearing which make the bank profitable. Several researchers have made examination of this relationship Kaddumi,2012; Falope and Ajilore ,2009;Henok,2015;Abor ,2005 and Mabwe Kumbirai and Robert Webb, 2010 have concluded that there is a significant and positive relationship between the amount of loan and advances given to customers and the performance of the bank.

H5: The ratio of loans and advances to total customer deposits significantly and positively affect the performance of private commercial banks .The higher the ratio means that banks extend the collected fund from their customers to a more profitable business arrangement earning a higher interest income. Several researchers came to the conclusion that there is a significant positive relationship between the ratio of loans and advances to customer deposit with the banks performances (Aragaw,2015; Eltabakh, Ngamkroeckjoti, & Siad ,2014;Eltabakh, Ngamkroeckjoti, & Siad ,2014).

H6: The ratio of current assets to total assets has a significant negative effect on the private commercial banks performance. Research outputs claim that when the ratio of current assets to total assets grow, then the profitability of the firms under consideration declines(,Weinraub and Visscher ,1998;Tufail ,2008;Wang,2002;shin and Soenen ,1993;Lazaridis and Tryfonidis,2006;Falope and Ajilore ,2009;Henok ,2015).

H7: The Ratios of current liabilities to total assets has a significant negative effect on the performance of private commercial banks in Ethiopia. The results of empirical evidence by several researchers (Tufail,2008;Weinraub and Visscher,1998;Afza and Nazir,2007;Afza and Nazir ,2008) corroborate the claims raised in this hypothesis.

H8: the ratio of total cost to total income of the private commercial banks has a significant & negative effect on their performance. The study made by Mabwe Kumbirai and Robert Webb, 2010 claimed that this ratio measures the income created per each $ cost. As this ratio grows down, the authors claimed that the performance of the banks improves.

1.7. Significance of the Study

The measurement of bank performance particularly commercial banks is well researched and has received increased attention over the past years (Seiford and Zhu, 1999). A large number of empirical studies were made on private commercial bank performance around the world including Ethiopia (Yeh, 1996; Webb, 2003; Lacewell, 2003; Halkos and Salamouris, 2004; Tarawneh, 2006). However, little has been done on the impact of working capital management on the bank performance in Ethiopia. Therefor this research work shall serve as a reference for further researchers in the subject matter.

The output of the research work will also be used for the commercial bank management to understand the impact of working capital management in improving their performance.

It will also be a valuable input for the bank management and governance body in their working capital policy framing.

1.8. Scope of the Study

It is quite important to define the horizons of the of the study so that readers of the research work could understand the direction to which the study is heading, This researcher work is delimited to nine private commercial banks in Ethiopia from the 16 private commercial banks in operation. The selected banks will be studied for the period from 2014-2019.

The selected private commercial banks profitability will be studied only from the perspective of how working capital management impacts them in making their profits, profit being measured as net return on shareholders' equity. The study does not consider other factors that could have contributed for the profitability of the private commercial banks in Ethiopia.

1.9. Limitation of the Study

This research has some limitations which readers of the research work need to consider. The first limitation is that the selected independent variables of this study might not be the only factors influencing the private commercial banks' performance. Second, the time horizon that the private commercial banks are studied is delimited to six years from 2014 to 2019. The third limitation is that only nine out of the 16 private commercial banks were studied for the specified period. The fourth limitation is macro variables were not taken in to account for their impact on performance measure of the sample private commercial banks. Use of secondary data and excluding qualitative data such as management capacity and efficiency in operating the banks are also other limitations. Due to absence of stock market, some profitability ratio analysis such as price / earnings ratio and price /cash flow ratios were not analyzed as they require market value of the stocks (shares).

1.10. Organization of the Paper

The study consists of five chapters of which chapter one deals with the introduction that includes background of the study, statement of the problem, the objectives why the study is made, and hypothesis of the study, its scope, limitations of the study. Chapter two deals with the review of literatures for the study. The third chapter is about methodology of the study and the fourth chapter is dedicated to data analysis and interpretations of the results. The conclusion and the recommendation of the study are presented in the last chapter of the research paper.

Chapter Two

Literature Review

2.1. Theoretical Review

I. Over View of Working Capital Investment

Working capital comprises of cash, short-term securities, inventories, account receivable and account payables**.** Working capital meets the short term financial requirements of a business enterprise. Therefore, working capital is the investment required for running daily business activities. It is the result of the time lag between the expenditure for the purchase of inputs for producing goods and services and the cash collection of the sales of finished products or services rendered (Gitman, 2005). The working capital requirements decide the liquidity and profitability of a firm (Shin and Soenen, 1998;McInnes,2000).

Working capital management involves the relationship between a firm's short–term assets and its short-term liabilities. According to Khan & Jain (2007) 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. Van Horne (2000) Claims that working capital management is the administration of current assets in the name of cash; marketable securities; receivables; inventories and Block &Hirt (1992) are of the view that, working capital management involves the financing and management of the current assets of the firm.

Businesses are obliged to hold cash and short term securities to satisfy financial agreements (the contractual motive), make planned expenditure (the transactions motive), protect the business against unexpected short term cash demands (the safety motive), and, invest in unexpected short-term opportunities that may arise (the speculative motive). Inadequate liquid resources can be severe, primarily by impacting on liquidity, but also by dislocating business decisions towards short payback low profit operations in order to survive (McInnes, 2000).

The classic traditional approach to cash management stresses that idle cash is necessary to prevent liquidity problems. However, idle cash carries with it an opportunity cost in either lost income revenue or excess interest payments on the lines of credit (Phillips, 1997)**,**

On the contrary contemporary approach promotes that the investment in cash should be subject to the same criteria as investments in other types of assets such as considering the required rate of return (McInnes,2000).

II. Financing Working Capital

Working capital contributes to the composition and structure of long-term and short-term financing of a business (Gitman, 1997, Asch and Kaye, 1989). The forms of finance, which can be used to fund working capital, namely long-term finance and short-term finance are presented and discussed (Gitman, 1997 cited in McInnes,2000).

A. Long-Term Sources

Four main sources of long-term fund are known, that may be used to fund working capital. These are: Equity, Long term debt, Off-balance sheet financing and Asset-based financing.

Equity Finance can be used as a source of finance for working capital; but the cost of equity finance is known to be higher than debt (McInnes, 2000). This form of finance is preferred if the cash conversion cycle is prolonged and risky (Gitman, 1997).

Using long-term debt: in financing working capital depends on the explicit and implicit costs of this form of finance. This requires that due attention be gives to the financing features such as interest rate, maturity or payment dates, loan size, borrower risk, collateral, restrictive covenants, purpose of the loan, and standard terms and conditions (Gitman, 1997; Ross, 1990; McInnes,2000;Andebet ,2016). Such financing sources could have restrictive covenants on the borrower, like the requirement of maintaining a minimum level of working capital (Gitman, 1997; Ross, et al. 1990). On the other hand long-term debt may not provide much financial flexibility, but it ensures that a pre-determined level of finance will be available for a pre- determined period of time. This attribute minimizes the risk of an abrupt shortage of finance which in tum could have serious implications for liquidity (Gitman, 1997; McInnes, 2000).

off-balance sheet financing could also be used by some business entities to keep financial statements clean and not distort financial ratios (Hill and Sartoris, 1992; Gallinger and Healey, 1987;McInnes,2000).This off-balance sheet finance types include unfunded pension liabilities, leases, and unconsolidated subsidiary debt, in-substance defeasance of debt and project financing with unconditional commitment arrangements, and the sales of

accounts receivable and inventory (Hill and Sartoris, 1992; Gallinger and Healey, 1987; McInnes,2000).

Asset-based financing is a secured long-term loan that uses such assets as marketable securities, accounts receivable, inventories, fixed assets (plant, equipment and real estate) as collateral for loans. Asset-based financing may involve a number of options such as pledging assets, selling assets, and leases, mortgaging, loan-option-agreements, pensions and factoring assets (Hill and Sartoris, 1992; Gallinger and Healey, 1987).

B. Short-Term Sources

For business operations, short-term decisions are routine operational decisions because once implemented they are easier to change than is the case with long term decisions as was made evident above (Hill and Sartoris,1992).

Literatures identify two main sources of short-term funds. These are spontaneously generated sources such as accounts payable, provisions and accruals, and non-spontaneously generated sources such as unsecured and secured short-term borrowings and financing instruments.

Accounts payable, arises directly from the business's operations and represents a crucial source of internal spontaneous unsecured short term financing and cash flows (Maness, 1994; Scherr, 1989). Accounts payable is the largest single conduit for cash outflow in most businesses (Gallinger and Healey, 1987).It is also known source of interest free financing (Fraser, 1996).''Accounts payable arises as a result of the unsynchronized timing of disbursements for goods and services, to the extent that disbursement occurs after the receipt of goods and services, credit, which is a source of funds, has been created (Asch and Kaye, 1989; Van Home, et al. 1985; McInnes, 2000). Accounts payable is likely to fluctuate with changes in operating activities (Hill and Sartoris, 1992, Ross, et al. 1990, Richards and Laughlin, 1980).

Since accounts payables do not have an explicit cost of finance, an incentive may exist to rely heavily on this source of finance. However, once the implicit costs, such as higher pricing by suppliers, and foregoing cash discounts, is taken into consideration, this ostensibly "free" source of financing may prove to be rather costly (Payne, 1993;McInnes,2000).

There are normally no explicit costs such as interest and financing charges associated with this form of financing, provided payment is made within the stipulated period (Soenen, 1993; Weston and Brigham, 1992; Asch and Kaye, 1989; Van Home, et a. 1985; Richards and Laughlin, 1980 cited in McIness).

Accruals are another discretionary source of spontaneous funding. These comprise expenses that are incurred before payment is made. The most common forms of accruals are expenses for interest payments, taxes or dividends, wages and salaries. Accruals arise as a result of the periodic payment for goods and services, such as on a weekly, monthly or annual basis (Asch and Kaye, 1989; Van Home, et al. 1985). Accruals generally are unsecured as no assets are pledged as collateral (Gitman, 1997) and attract no explicit costs providing payment is made on due date (Gallinger 1997).

Unsecured financing is short-term financing obtained from the money market without pledging any specific assets as collateral (Gitman, 1997). It is usually referred to as financial statement lending as the loan is generally based on the strength of the income statement and balance sheets of the business. Unsecured loans can be based on the financial strength of a business, the cash flow generating potential, the potential of operations to assist in repaying the loan. Unsecured loans can be made if the creditworthiness of the customer is adequate and the creditor is capable of repaying (Hill and Sartoris, 1992; Gallinger and Healey, 1987).

Understanding of the banking system is crucial to those who manage working capital (Hill and Sartoris, 1992). Banks lend through single payment notes, bank advances, loans, overdrafts, zero balance account, lines of credit or revolving credit agreements. They charge the prime overdraft rate, fixed or floating rate of interest. Banks or businesses also issue a number of marketable securities that include treasury bills and treasury notes. The main non-government money market instruments are negotiable certificates of deposit, commercial paper, banker's acceptances, Eurodollar deposits, money market funds and repurchase agreements, and international loans. They tend to have a higher return than government issues with similar maturities due to the slightly higher risks associated with them. The yield on the securities is a function of the marketability, maturity, default risk and the taxability of the security (Gitman, 1997; Hill and Sartoris, 1992; Asch and Kaye, 1989;Kallberg and Parkinson, 1984).

Secured financing includes bank advances, overdrafts and loans, and can be a major source of secured short-term loans if banks require collateral in proportion to the amount it will advance. Businesses generally borrow on a secured basis after they have exhausted unsecured sources of funds as there is a higher cost of secured borrowing attributable to the greater risk of default and increased administration costs (Gitman, 1997). Two high cost approaches of obtaining secured short-term financing are by means of pledging and factoring assets such as inventory and accounts receivable (Gitman, 1997; Gallinger and Healey, 1987).

Pledging accounts receivable as collateral may result in a cost above the prime rate of interest offered by banks and an administration service charge. Factoring involves the sale at a discount to a factor or other financial institution the account receivables with its related credit risks. The factoring costs include commissions, interest levied on advances and interest earned on surpluses. Though it is a costly means of obtaining short-term financing, the business is able to benefit from the conversion of accounts receivable into cash and this helps improve the synchronization of cash inflow with cash outflow (Gitman, 1997;Gallinger and Healey, 1987).

Inventory is attractive as collateral because it normally has a market value greater than its book value. It is important that the lender considers the marketability, price stability and physical properties of the inventory when evaluating the inventory as collateral. There are three main types of inventory collateral:floating inventories liens, trust receipt inventory loans and warehouse receipt loans. (Gitman, 1997; Brigham and Gapenski, 1994;Gallinger and Healey, 1987).

2.2. Importance of working capital Management

Working capital management is the management of the investment in current assets and the financing of the current assets, and involves setting working capital management policy and carrying out that policy in a business's daily operations (Brigham, et al. 1999), to it achieves its goals and objectives, such as shareholder wealth maximization, competitive advantage, and growth (Cooper, et al. 1998; Chang, et al. 1995;Asch and Kaye, 1989). The purpose of working capital is to ensure the effective and efficient utilization of the business's investment in fixed assets (Paulo, 1992; Bierman and Smidt, 1988). More specifically, if performance criteria such as liquidity, solvency/ bankruptcy, efficiency,

profitability and Economic Value Added (EVA) are considered, it will be clearly apparent that the business must hold and manage the different levels of working capital which are appropriate to its performance criteria (Brigham, et al. 1999; Cooper, et al. 1998; Gitman, 1997; Paulo, 1997; Brigham and Gapenski, 1994;Weston and Brigham, 1992;Ross, et al. 1990; Scherr, 1989; Cheatham 1989; Gallinger and Healey 1987; Richards and Laughlin, 1980).

I. Liquidity

Liquidity is particularly important to shareholders, long-term lenders and creditors, as it provides information about a particular business's safety margins afforded to creditors and its ability to repay loans. The levels of inventory, credit, accounts payable and cash that form part of the overall cash flow of a business affect the liquidity of the firm (Maness, 1994). For a business that is decreasing its levels of cash by for example carrying too much inventory endangers its liquidity, which if not rectified will lead to bankruptcy. On the other hand increasing levels of cash may result in poor resource utilization and the business may not earn a satisfactory return on assets (Cooper, et al. 1998; Gitman, 1997; Dierks and Patel, 1997). By maintaining an appropriate level of liquidity a business should be in a position to survive down turns and moreover, it may be able to exploit profitable opportunities as they arise (McInnes,2000;Aycheletm2018).

II. Solvency/Bankruptcy

Illiquidity, unless remedied, will give rise to insolvency and eventually bankruptcy as the business's liabilities exceed its assets (Cooper, et al. 1998, Gitman, 1997, Dierks and Patel, 1997. Excessive debt exposes the business to potentially large interest costs and the risk of potential bankruptcy (Gitman, 1997; Martin, et al. 1991; Asch and Kaye, 1989).

III. Efficiency

Management should be particularly concerned about determining how effective and efficient a business is in utilizing assets to generate revenues through, generating cash sales and credit sales, and comparing this to the amount invested in net assets, and the average length of time inventory spends in the business before it is sold or used in the production process, and the average time between buying inventory on credit and settling the creditors (Gitman, 1997;Kamath, 1989; Richards and Laughlin, 1980).

Market share may be constrained unnecessarily, if the levels of accounts receivable are decreased by restrictive credit policies (Loan). On the other hand, if the investment in accounts receivable is not appropriately controlled then debtor delinquency, the cost of debt recovery, and bad debts could exceed the benefits from the increase in credit sales (Brigham, et al. 1999; Gallinger and Healey, 1987).

IV. Profitability

What Management, shareholders & creditors consider profitability is not the same. Management consider it as an important input when planning the operations of the business, whereas creditors and shareholders look at profitability to determine the returns on their investment in the business and assess the risks of their investments, which may be affected by the industry structure and the nature of the competitive environment (Gitman, 1997). Management has some discretion over the level of investment in working capital and the financing of this investment, at any particular level of output; however this decision involves a risk-return tradeoff (Madura and Veit, 1988). Generally, the higher the risk the higher the return will be demanded by management and shareholders in order to finance any investment in working capital (Cooper et al. 1998; Gitman, 1997). For instance a reduction in the current asset level increases the risk of stock-outs or cash outs if the demand in sales increases unexpectedly. If the level of current assets decreases then profitability improves as the asset turnover increases. Alternatively, high levels of working capital decreases risks and thus returns because higher financing costs are associated with maintaining high levels of current assets using external sources of funds. If the level of current assets decreases then the asset turnover increases, but at the cost of profitability (Gitman, 1997; Martin, et al. 1991; Asch and Kaye, 1989; Madura and Veit, 1988; Gallinger and Healey, 1987). In the quest for profitability managers have to eliminate uneconomic investments (Uyemura and Kantor, 1997) and costly financing options to ensure value is created for the shareholders.

V. Economic Value Added (EVA)

The concept of EVA reinforces a business's focus on how to create value for customers, employees, suppliers, investors, analysts, regulators and shareholders (Uyemura and Kantor, 1997; Blair, 1997; Dierks and Patel, 1997; Stewart ill, 1994,).Shareholders demand continuous improvements of their business financially as studied by Dierks and Patel,

(1997), and the management of working capital and operating staff often require incentives to improve their internal operating performance (Stephens and Bartunek, 1997; Reilly and Brown, 1997). Combining EVA with the management of working capital provides management with the incentive to focus on value creation (Grinblatt and Titman, 1998; Blair, 1997; Uyemura and Kantor, 1997;Dierks and Patel, 1997cited in McInnes ,2000 and Justin, 1996).

2.3. Managing the Components of Working Capital

I. Cash Management

Ayichelet (2018) in his thesis claimed that cash is a central component of business liquidity in any business firm. A huge cash speculation minimizes the chances of liquidity risk, but it decline the profitability of company. The purpose of cash management is to determine and achieve the appropriate level and structure of cash, and marketable securities, consistent with the nature of the business's operations and objectives (Brigham, et al. 1999, Gitman, 1997, Schilling, 1996, Scherr, 1989, Cheatham, 1989). Cash and marketable securities should be managed so as to achieve a balance between the risk of insufficient liquid or near liquid resources, and the cost of holding excessively high levels of these resources. In order to achieve and maintain this balance, which is subject to continual dynamic processes, both the motive and the appropriate level of cash needs to be established and monitored (Brigham, et al. 1999;Gitman, 1997; Phillips, 1997; Chambers and Lacey, 1994; Brigham and Gapenski, 1994;Moss and Stine, 1993; Miller, 1991; Scherr, 1989; Cheatham, 1989;Richards and Laughlin, 1980) cited in McIness. In order to do this a variety of activities need to be undertaken, because of the integrative nature of cash to the operation of the business. For example, since all the business's assets are paid for with cash and are converted through time back into cash activities by means of improving cash forecasts, synchronizing cash flows, using float, investing excess cash, speeding up cash receipts, and delaying cash payments. This will have a considerable impact on the minimum level of cash necessary to maintain a particular level of liquidity.

If a business improves its forecasts and arranges its affairs so that cash inflows are synchronized with cash outflows, and transaction balances can be reduced, the level of working capital can also be reduced. If working capital is financed from debt, the reduction in the magnitude of working capital will result in lower interest payments which in turn

will give rise to improved profit, greater efficiency and productivity, and enhanced return on assets and return on equity (Brigham, et al. 1999;Miller, 1991; Cheatham, 1989).

II. Accounts Receivable Management (Loans and Advances)

Accounts receivable results from credit sales. The purpose of credit sales is to stimulate sales in order to expand market share and if possible enhance production capacity efficiency. If the benefits exceed the costs of credit sales, the business's performance should be enhanced, and should be reflected in key performance criteria such as efficiency, productivity, and return on equity (Brigham, et al. 1999;Gitman, 1997; Hampton and Wagner, 1989; Scherr, 1989;Gallinger and Healey, 1987; Kallberg and Parkinson, 1984; McInnes,2000;Ayichelet 2018).

The management of accounts receivable is mainly decided by the business's credit policy. The investment in accounts receivable, debtors, as with all investment decisions, must earn a rate of return in excess of the required rate of return. Major risks that arise from granting credit include bad debts and debtor delinquency, because they reduce the returns from the investment in accounts receivable, and if inadequately monitored can impact severely on the business's financial performance (Brigham, et al. 1999; Gitman, 1997; Hampton and Wagner, 1989; Scherr, 1989; Gallinger and Healey, 1987; Kallberg and Parkinson, 1984). *Credit policy and collection policy* have to be actively managed because they affect the timing of cash inflows, sales, profits and accounts receivable risks (Gitman, 1997; Schmidt, 1996; Chambers and Lacey, 1994; Moss and Stine, 1993; Hill and Sartoris, 1992; Gallinger and Healey, 1987; Richards and Laughlin, 1980). Any changes in credit and collection policy have a direct impact on the average outstanding accounts receivable balance maintained relative to a business's annual sales (Moss and Stine, 1993; Richards and Laughlin, 1980). Thus a business should take special efforts to monitor both credit granting and credit collection processes (Chang, et al. 1995; Back, 1988 cited in McInnes,2000).

Credit policy involves three factors: the credit selection, credit standards, and credit terms. Credit selection concerns the decision of whether or not to grant credit and if so, how much credit to extend. This is done by means of categorizing customers by both risk factors, common attributes, establishing standards, evaluating risks and selecting appropriate responsibilities (Schmidt, 1996;Gallinger and Healey, 1987). As credit decisions have an impact on cash flows the first stage is to establish credit control to assess creditworthiness

of customers, prior to making a credit sale (Back,1988). To determine who should receive credit, granting credit requires consideration of the debtor's creditworthiness (Gitman, 1997; Scherr, 1989; Kalleberg and Parkinson, 1984).

It is important to note that accounts receivable management and inventory management is Closely linked in that account receivable are inventories that have been sold yet have not generated cash inflows.

III. Accounts Payable Management

Accounts payable, a current liability, refers to the credit, which has been extended to a business by its suppliers (Gallinger and Healey, 1987). The decision to make use of supplier credit should be carefully assessed in terms of alternative sources of finance, discounts (Winkler, 1996;Back 1988;Gallinger and Healey, 1987;Richards and Laughlin, 1980), credit limits, public image with respect to its credit rating, transaction costs, administrative costs, information costs, control costs, the value of the relationship with creditors, buying power of the purchasers, the credit terms, stability and general practices of suppliers, and risk factors (Brigham, et al. 1999; Payne 1993;Hill and Sartoris, 1992; Gentry, et al. 1990; Back 1988; Gallinger and Healey, 1987). If the availability and cost of supplier credit are better than other forms and sources of finance, then supplier credit should be used. Once this decision has been taken accounts payable management will probably investigate the extent to which it can stretch accounts payable without jeopardizing its credit status with suppliers (Cheatham, 1989; McInnes, 2000).

IV. Inventory Management

Inventory is the list of stock of raw materials, working in progress or finishedgoods which are waiting to utilize in production or to be sold (Ayichelet,2015; Atrill&Mclaney ,2006) stated that Inventories or stocks are the major parts of current assets which have a significant effect on working capital.

A research work by Brealey and Meyers (2006) explained that firms store inventories to Minimize the risk of running out of stock and losing sales as well as customers (cited by Ayichelet 2015). Atrill&Mclaney (2006) also have described that the most common reason that firms hold inventories to meet day to day requirements of customers and production. Sometimes a business may hold excess level of stock more than necessary for the purpose of

production or to be sold, if it is believed that future supplier's may be inconsistent or the cost of inventories will go up.

2.4. An Aggregative Approach to Working Capital Management

cash conversion cycle which was developed by Richards and Laughlin (1980) integrates the management of all the components of working capital by focusing on the management of the ages of accounts receivable, inventories and payables as individual components, and as an aggregate by specifically managing the cash flow timeline as a whole rather than trying to optimize anyone component of working capital at the expense of another (Maness, 1994, Shulman and Cox, 1985 cited in McInnes, 2000).

The CCC is defined as sum of the receivables conversion period, plus the inventory conversion period, minus the payables deferral period as cited in McInnes, 2000.

Integral to managing the CCC is the management of the current assets and current liabilities and the relationships that exist between them. In terms of the CCC approach the potential to improving working capital management becomes transparent as a result of the calculation and analysis of the CCC. If the length of the CCC can be optimized, efficiency and productivity benefits accrue to the business, as revealed in the illustration. (Gitman, 1997; Miller 1991)

2.5. Conservative, Aggressive and Moderate Approaches

Any business entity to cope up continually to the changing external environment, and determine the required level and mix of the investment in current assets and the corresponding financing of the current assets, it may select either of the conservative, aggressive and moderate approaches in its working capital management.

The working capital management by the conservative approach is characterized by the management of large amounts of cash, marketable securities, accounts receivable, inventories, and its use of permanent capital to finance all permanent asset requirements to meet some or all of the seasonal demands.

On the contrary, by aggressive approach, we mean that the entity's working capital management emphasizes the management of smaller holdings of cash, marketable securities, accounts receivable, inventories and financing all seasonal needs and part of permanent current assets with short-term credit. The balance, including fixed assets, is financed with long term funds.

The in between moderate approach shares characteristics of both the aggressive and conservative approaches where temporary short-term assets are financed with short-term loans, while fixed assets and the permanent level of current assets are financed with long-term loans (Brigham, et al. 1999; Gitman, 1997; Brigham and Gapenski, 1994; Weston and Brigham, 1992; Martin, et al. 1991; Asch and Kaye, 1989; McInnes,2000).

2.6. Review of Empirical Studies

Many researchers have studied about working capital management on firm's performance from different perspective. The following thesis and journal articles were reviewed by the student researcher and thought found relevant for this research. In this section, the researcher presents the empirical surveys made so far on the subject matter of working capital management and its impact on performance of Business firms in general and banks in particular. The researcher commences with the research methodology that was used by the researchers, and then proceeds to the research design, sample selection, data collection, variables, as well as data analysis methods that were used by the individual researchers and the respective results found.

Piabuo (2016) examined the effect of working capital management on the profitability of Afriland First Bank of Cameroon. The researcher used Time series data from 2002 to 2013. Correlation analysis and ordinary least square regression were used to determine how working capital affects profitability. The finding of the study shows that working capital management effectively influences the performance of Afriland First Bank. The analysis shows that customer deposits, the size of the bank, outstanding expenditure and return on assets all have a positive impact on bank profitability and are statistically significant, however, an increase in reserves leads to a reduction of profitability while other factors such as leverage have a positive effect on bank profitability.

Adamu(2015) made a study with the objective of examining the effect of working capital management of Deposit Money Banks in Nigeria. The researcher made the study with time series data covering the period of six years from 2007 to 2013. Data for the study were extracted from the firms' annual reports and accounts. After running the OLS regression, a robustness test was conducted for validity of statistical inferences, the data was empirically tested between the repressors and the regressed, and the multiple regression test result revealed that there is a strong positive relationship between current ratio and quick ratio

with ROA of Listed Deposit Money Banks in Nigeria, while cash ratio was found to be inversely but significantly related to ROA of Listed Deposit Money Banks in Nigeria.In line with the above findings, the study has empirically proved that higher liquidity signifies more profitability.

Osuma G., Ikpefan A., Romanus O., Ndigwe C, & Nkwodimmah P. (2018) has the effect of working capital management and found out that it is relevant for the success of the banking industry in Nigeria. The profitability of the banking sector deeply depends on the efficient management of a bank's working capital. The authors' main objective of the study was to examine how profitability of banks can be enhanced through efficient and effective working capital management. To empirically carry out the analysis, the author used panel data which consist of ten (10) deposit money banks in Nigeria for seven years (2010–2016). For bank profitability, the author took return on asset (ROA) and return on equity (ROE) to examine the best measure for bank profitability, with the indicators of working capital; net interest income, current ratio, profit after tax, and monetary policy rate. Results of the study showed that working capital management has a significant effect on the profitability of the selected banks and that return on asset is a better measure for bank profitability. The study revealed that a unit change in current ratio has negatively affected the return on equity.

Muthubandara G. (2019) studied the impact of working capital with the title 'working capital management and profitability; an analysis of listed commercial banks in srilanka'.The researcher studied the relationship between working capital management and profitability using pearson correlation analyses and the effects on profitability is found out by using the regression analyses. A sample of seven annual financial statements (secondary data) covering the period 2007-2011 of listed commercial banks in srilanka were covered under his studies. The variables of the study were current ratio (CR), loans to deposit ratio (LDR) and cash ratio (CSR) and the profitability including the net profit margin (NPM), return on equity (ROA) and return on capital employed (ROCE). The result of the study revealed that CSR has great impact on NPM and ROA than other components.

The study by D.M.Mathiva (2009) made a research focusing on the relationship between two determinants :capital adequacy and cost to income ratio and it relationship with profitability of commercial banks in Kenya with a view to drawing conclusions to what extent they contribute for the performance of banks in Kenya. The author examined closely

the capital earnings relationship so as to determine which among the potential explanations of the relationship appear to be important. The conclusion of the author is that the higher the Cost to income (CIR) the lower is the profitability of the commercial banks in Kenya and recommended banks to strive in minimizing the cost to income (CIR) ratio. Though this is not directly liquidity ratio, it indicates the level of capital adequacy which is the proportion of debt to equity of the firm which in turn tells the level of aggressiveness in financing of the business firm.

Beemnet K.(2018) studied working capital management under the title 'the impact of working capital management on profitability of construction firms in Ethiopia: the case of category a construction companies ''.the researcher has collected data of Financial statement from sample of seventeen (17) construction companies covering a period of eight years 2008-2015. The collected Data was analyzed on quantitative basis using descriptive and regression analysis (ordinary least square) method. The variables which were studied under independent variable caption were accounts receivable period, inventory holding period, account payable period, and cash conversion cycle and the proxy profitability considered was return on assets (ROA). Current ratio and quick ratio were also used as liquidity indicator and firm size, as measured by logarithms of sales and sales growth rate as measured by change in annual sales, as control variables were used. The result of the study revealed that a significant negative relationship between average collection period and profitability indicating that an increase in the number of days a firm receives payment from sales affects the profitability of the firm negatively. Secondly, the result stated that there exists a negative relationship between inventory holding period with profitability and positive relationship between accounts payable period and profitability of the samples firms which were under the study. But, both inventory holding period and accounts payable period was found to be insignificant in affecting profitability of the firms. The third result revealed in the study was that there exists a negative relationship between cash conversion cycle and profitability of the firm indicating that as the cash conversion cycle decreases it leads to an increase in profitability of the firm.

Ephrem A. (2018) made a study on five grade 1 construction companies with the title 'impact of working capital management on profitability of small and medium scale enterprises (SMEs)'. The Case of Nifas-Silk-Lafto and Kirkos Sub Cities. The researcher used primary and secondary data over the period from 2011-2016 collected and analyzed

the variables using regression and correlation analysis. He took account receivable & payable period, cash conversion cycle, and firm size (measured as log of total asset) financial asset to total assets, debt ratio and current ratio as independent variables and gross profit as proxy of the dependent variable. The result of the study revealed that there is a positive but not significant relationship between sizes of firms (measured by logarithm of total asset) and net operating profitability. The result has also shown that longer Cash Conversion cycle and average collection period have negative impact on Net Operating Profitability of a firm.A significant negative relation between SME‟s profitability and the number of days accounts payable was also noted in the study, Showing that the longer it takes firms to pay their obligations the less profitable they will be.

Ephrem w(2011) made a study on the impact of working capital management on profitability of small and medium scale enterprises (SMEs) in Addis Ababa, The Case of Nifas-Silk-Lafto and Kirkos Sub Cities. The researcher used primary and secondary data and analyzed the variables using regression and correlation analysis. He took account receivable & payable period, cash conversion cycle, firm size and current ratio as independent variables and net operating profit as proxy of the dependent variable. The result of the study revealed that there is a positive but not significant relationship between sizes of firms (measured by logarithm of sales) and net operating profitability. The result also shown that longer Cash Conversion Cycle and average collection period have negative impact on Net Operating Profitability of a firm.A significant negative relation between SME‟s profitability and the number of days accounts payable was also noted in the study, Showing that the longer it takes firms to pay their obligations the less profitable they will be.

Henok Y.(2015) made a study with the title ‘Working Capital Management and Firms’ profitability: Evidence from Manufacturing S.C. in Addis Ababa’. He studied whether working capital management has effect on profitability of manufacturing firms. He took account receivable & payable period, inventory holding period and current asset to total asset as independent variables and ROA as dependent variables. In his regression analysis show that there is inverse relationship between accounts receivable and inventory holding periods with profitability of the studied firms. He also found out that there is significant negative relationship between cash Conversion cycle and profitability of the sampled firms.

He also found out that a significant positive relationship between current liabilities to total assets ratio and profitability of the sampled firms. The relationship between current liabilities to total assets ratio and profitability was found to be a significant positive relationship.

Ayichelet k.(2018) has studied working capital management under the title 'the impact of working capital management on firms' performance: evidence from large taxpayer printing firms in Addis Ababa,Ethiopia'.The researcher took cash conversion period, inventory conversion period, account receivable period current ratio and firm size as independent variable and return on asset as dependent variable. Secondary data for six years were collected in respect of a sample of printing firms in Addis Ababa. The result of the analysis was inventory conversion period, account collection period and current ratio have significant negative relation with profitability where as a positive significant relationship was noted between cash conversion cycle and profitability of the sampled firms. However the researcher came up with insignificant negative relationship between the size of firm and profitability.

Eyob K. (2019) has made a research with the aim of examining the effect of liquidity risk on financial performance of Ethiopian commercial banks. Balanced Fixed effect panel regression was used for the data of nine commercial banks making use of secondary data for the sampled banks covering the period from 2007 to 2016 and was used. Eight factors affecting financial performance of Ethiopian commercial banks were selected and analyzed. The author has put that the higher the share of liquid assets in total assets, the higher the capacity to absorb liquidity shock. The proxy of dependent variable is presumed liquidity and the independent variables incorporated in the study are coverage ratio, net stable funding ratio, and loan to deposit ratio and liquidity ratio, Cash reserve ratio, portion of nonperforming loan, CPI and GDP growth rate. The result of panel data regression analysis showed that liquidity coverage ratio, net stable funding ratio, loan to deposit ratio and liquidity ratio had negative and statistically significant impact on Ethiopian commercial banks financial performance. The result also revealed that Cash reserve ratio, portion of nonperforming loan from the total bank loan, CPI and GDP growth rate had negative but statistically insignificant/ has no any impact on financial performance of Ethiopian commercial banks for the tested period. Therefore, the author claimed that

liquidity risk was negatively affecting the financial performance of Ethiopian commercial banks.

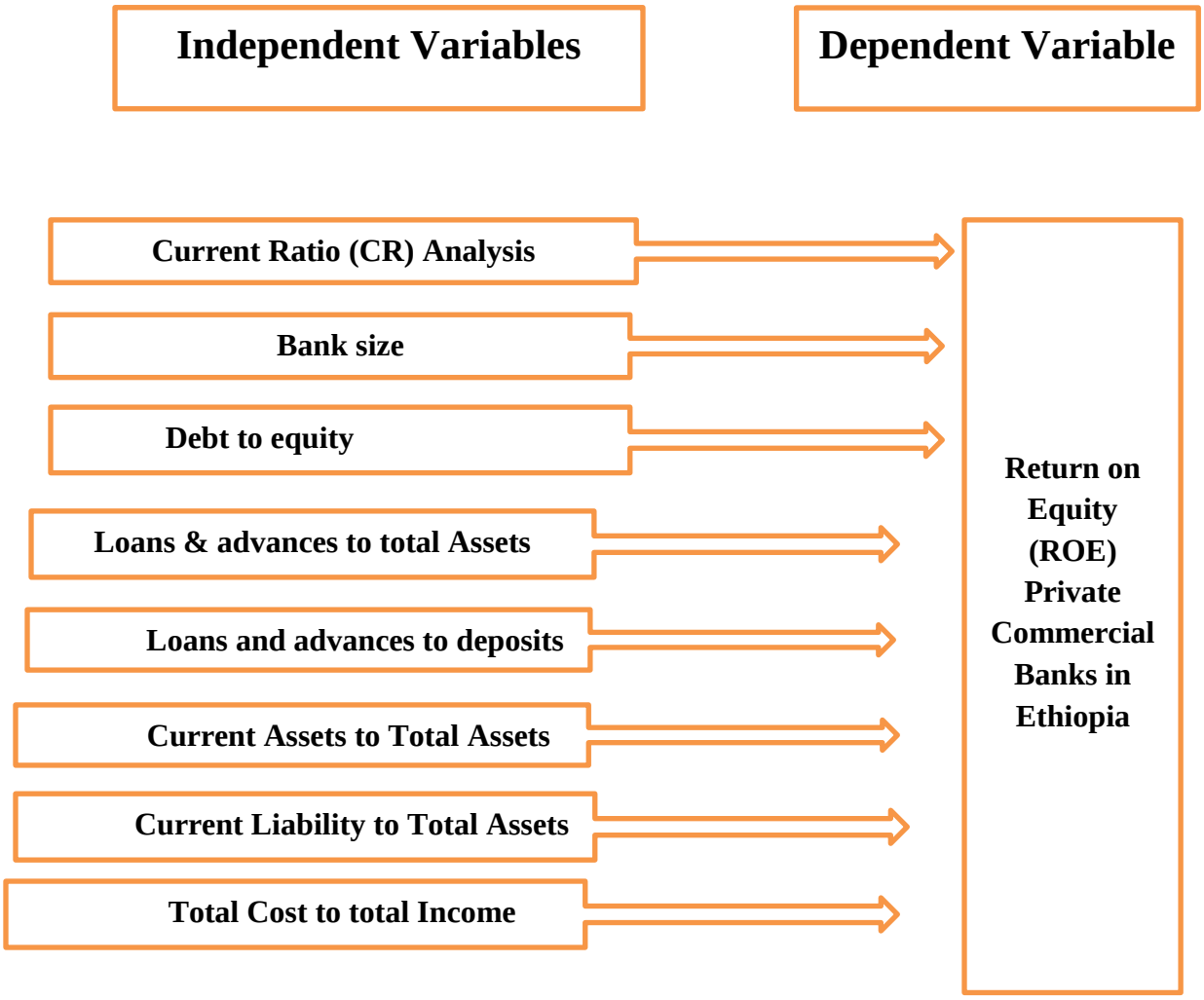
2.7. Justification of the Research (Knowledge Gap)

Evaluation and measurement of bank performance is a well-researched area and has been receiving increased attention over the past years under various titles. During empirical literature reviews, I came across a lot of empirical studies, which attempted to investigate the relationship between working capital management and profitability of business firms. But the student researcher came up with an understudied industry of the banking sector in Ethiopia under the title ‘’working capital management and banks performance’’. There is a lack of research studies on the title to the knowledge of the researcher the empirical studies on the title were not done.

On the other hand review of empirical studies made elsewhere, there are some dis agreements on the sign of relationship between the studied variables and their impacts on bank performances. while reviewing the effect of current ratio on the performance of firms, empirical results show that the ratio significantly and negatively impacts the performances of the firm under the study (Osuma, Romanus, Ndigwe & Nkwodimmah, 2018;Vijaykumar and Venkatachalam 1995;Ayichelet,2018;Godswill,Ailemen,Osabohien, Chisom Pasca,2018;Eyob, 2019).on the contrary other research works reveal that current ratio positively contribute to the performance of the firsm under study(Gamlath,& Rathiranee(ND);Adamu,2015;Tufail ,2008). Therefor this research paper shall add its own share in clarifying some of the points raised above.

2.8 conceptual framework

The impact of working capital management for the profitability of private commercial banks is portrayed as follows:



Source –Own Design

Chapter Three

Research Design and Methodology

3.1. Introduction

The preceding chapters discussed the literature on working capital management and its effect on the profitability of private commercial banks in Ethiopia. It has discussed both the theoretical and empirical literatures with regard to working capital management and its effect on profitability of private commercial banks.

The purpose of this chapter is to present how the researcher designed the research hypotheses and the research approach adopted by the researcher. In this chapter, the researcher tries to present the general research methodology that is going to be employed to make the study. In the section to follow, all relevant methodology and techniques thought relevant to conduct this research are discussed. The discussion is laid out as follows: the research methodology, the research design, population, sampling method, description of study area, data collection tools, data analysis method, description of variables, i.e. dependent and independent variables, model specification and the means by which the final result of this study is to be disseminated.

3.2 Research Methodology

By Research methodology, we mean that the procedures or techniques used to identify, select, process, and analyze information about the research topic. In a research work, the methodology section allows the reader to critically evaluate a study's overall validity and reliability.

Although there are other distinctions in the research approach, the most common types of research are classified in to qualitative and quantitative. A research work may apply the combination of these two approaches in doing **it**s research work**. The researcher here uses quantitative method.**

3.3. Research Design:

Research design is a plan outlining how information is to be gathered for an assessment or evaluation that includes identifying the data gathering method(s), the instruments to be used, how the instruments would be administered, and how the information would be organized and analyzed (Assumptah & Muhari, 2017).

Research design deals with a logical problem and not a logistical problem as claimed by Yin, 1989. Before a builder or architect can develop a work plan or order materials, he must first establish the type of building required, its uses and the needs of the occupants.in same fashion a researcher need to devise in same token.

The researcher applied a descriptive research design in conducting its research work. Descriptive research design by definition helps provide answers to the questions of who, what, when, where, and how associated with a particular research problem. According to John (2007) a descriptive and quantitative research approach is used in almost every sphere of life including sociological and business research. This approach was used to be applied by different previous researcher to determine the impact of working capital management on firm's performance i.e. (Afeef, 2011; Gill et al., 2010; Wobshet, 2014; Makori&Jangango, 2013 and Mifta, 2016, Ayichelet (2018).

3.4. Population

In this study, the target populations are the sixteen private commercial banks operating in the Ethiopian financial sector. In selecting the banks included in this study, convenience sampling designs have been used .Though working capital management applies to all industries , the researcher here selected only Private commercial banks which operate in the financial industry of Ethiopia. The data Source will be the National bank of Ethiopia and the individual banks and their websites.

3.5 Sampling Technique and Sample Size

From the total private commercial banks, the researcher will take a sample of nine private commercial banks for the period from 2014-2019 on convenience sampling method. The banks which are included in the study are: Oromia Int'l Bank S.C(ORM), Cooperative Bank Of Oromia S.C(CBO), Wegagen Bank S.C(WEG), Enat Bank S.C(ENA),Abysinia Bank S.C(ABY),Awash International Bank S.C(AWA), Abay Bank S.C(ABA), Addis Int'l Bank S.C(ADD), and Dashen Bank S.C (DAB).

The other criterion used in selecting sample units to be included in the study was holding a complete 6 years financial statement data from the years 2014 to 2019.The reason for selecting to this period is to capture the latest data and with the intention of applying the research outputs for problems at hand.

3.6. Data Collection and Analysis Tools

i. Data collection

The researcher has collected secondary data of the nine private commercial banks in Ethiopia for the period from 2014 to 2019 and the sources of the data are from the National Bank of Ethiopia and the sample commercial banks' websites. All the sample banks' audited financial statements for the period of study were uploaded in their respective bank web address. The sample size was determined by using purposive sampling method which is a nonprobability sampling procedure.

ii. Data Analysis Tools

The study has used two types of data analysis; descriptive and relational analysis. First Descriptive analysis was done to present the output of the study in terms of maximum, mean, minimum and standard deviation of the variables to be considered in the study. To properly apply the quantitative analysis; multiple regressions and Pearson's coefficient correlation were done by using a data processing package called stata 13.

3.7. Description of Variables

During the review of theoretical and empirical literatures, the researcher has identified significant working capital variables that influence the performance of all firms in general and commercial banks in particular. The variables were categorized in to two as dependent variable: (ROE) and independent variables: Current Ratio, bank size, debt to equity ratio, ,loans and advances to total assets Ratio, loans and advances to customer deposits, current asset to total assets and current liabilities to total liabilities and cost to income Ratio.

I. Dependent Variables

Dependent Variable is a variable that is dependent on independent variables. Return on equity (ROE) is used as dependent variable to measure the relationship of working capital management with the private commercial banks performance measured in return on equity. This is designed to determine how the private commercial banks' management is investing ,financing and managing the current assets and current liabilities of the commercial banks' asset in maximizing the performance and profitability of the banks. The term profitability is measured in different ways by different researchers. In this study, firm's performance will be measured in terms of Return on Equity (ROE).Different researchers

claimed that ROE is a good measure of bank profitabilities ,Ahmed and Khababa,1999; Rose and Hudgins ,2006 are only a few of them.

II. Independent Variables and measurement

Independent or predictor variable is variable that is being manipulated in order to observe its effect on the dependent variable (ROE here). To determine the effect WCM on return on equity ; working capital management components are considered as independent variables and used to measure the relationship of working capital management on firm's performance on the private commercial banks in Ethiopia. The independent variables taken here are, Current Ratio, bank size, debt to equity ratio,loans and advances to total assets Ratio, loans and advances to customer deposits, current asset to total assets and current liabilities to total liabilities and cost to income Ratio. Though the detail of each independent variable is discussed in the literature part, for simplicity the terminology is discussed below.

1. Current Ratio

one of the working capital management is the investment on current assets and financing them .Current ratio implies that whether a business entity's current assets are sufficient to meet the current liabilities or not. This measures the liquidity position of any business entity in terms of its short term working capital requirement.

Review of the empirical literature by Almazari (2013) revealed that the relationship between the working capital management (WCM) and the firm's profitability for the Saudi cement manufacturing companies. The author took a sample of 8 Saudi cement manufacturing companies listed in the Saudi Stock exchange for the period of 5 years (2008-2012). The study results clearly showed that Saudi cement manufacturing industries' current ratio was the most important liquidity measure which affected profitability of the industry the study.

The research by Akoto, Awnyo-Vitor and Angmor (2013) also tried to analyze the relationship between working capital management practices and profitability of listed manufacturing firms in Ghana. In the study, 13 listed manufacturing firms in Ghana covering the period (2005-2009) were taken. The result of the analysis by Using panel data

methodology and regression analysis, revealed that a significant positive relationship with current asset ratio.

2. Bank Size

In general, Bank size measures its capacity of undertaking its intermediary function. Different opposing views were revealed in different literatures. Under the Review part there was two opposing arguments both theoretically as well as empirically regarding to the relationship between bank liquidity and size. The first view was too big to fail which considers negative relationship between size and liquidity whereas; the traditional transformation view suggested positive relationship. Therefore, this study supported the second argument that was positive impact of bank size on liquidity. The proxy for bank size used in this study was the natural logarithm of total assets as of Poorman and Blake (2005) and Shen et al. (2010).

Many researchers also claimed that there is a positive relationship between bank size and performance measures. For example a study made by Arkhavein (1997) found a significantly positive association existed between size and bank profitability. Additionally the study by Short (1979) suggested that relatively large banks tend to raise less expensive capital and hence appear more profitable, size being closely related to capital adequacy of a bank. The claim of this research is that as bank size increases profitability increases as well

A local research made by Efrem(2018) Company size is found to affect the Gross profit of a company positively and this relationship is also statistically significant. The research claimed that larger firms tend to earn higher Gross Profit and the revised holds true.

On the contrary some researchers came up with an opposite result. In his research Berger, et al. (1987) developed a set of scale and product mix measures for evaluating the competitive viability of firms, and apply it to 1983 data. The research output pointed out that as product mix and scale increases, banks experience some diseconomies, implying a negative relation between size and returns. Boyd and Runkle(1993) in his research also found that a significant inverse relationship between size and rate of return on assets in U.S. banks from 1971 to 1990.

3. Debt to Equity

A study by Farhad &Aliasghar (2013) portrayed the relationship between capital structure and Profitability. The author used data from 252 non-financial companies in the period

from 1999 to 2008 in Tehran Stock Exchange. The author found a result which is Consistent with earlier theories. The author in his studies found that a positive association between the return on equity (ROE) and short-term debt. The result argued that increasing short-term debts with low interest rate will lead to increase in profitability. On the contrary the research work revealed that a negative association between ROE and long-term debt. So, when firms increase long-term debts, this results to decrease in profitability. Finally, the results also indicate a positive relationship between ROE and total debt.

Another study made by Abor (2005) investigated the relationship between capital structure and profitability by taking listed firms on the Ghana Stock Exchange (GSE) during the period from (1998-2002).The findings of the study revealed that there is a significantly positive relation between the ratio of short-term debt to total assets and performance measured in ROE,

Another study made on the financial sector by Taani (2013) analyzed the impact of capital structure on performance of Jordanian banks. The author took the annual financial statements of 12 commercial banks listed on Amman Stock Exchange were used for the study which covers a period of five (5) years from 2007-2011. The author came up with the results showing that bank performance, which is measured by net profit, return on capital employed and net interest margin is to be significantly and positively associated with total debt. But the author result also claimed that total debt is found to be insignificant in determining return on equity in the banking industry of Jordan cited in Aragaw (2015).

On the contrary some studies revealed an opposite result. For instance the study by Salim&Yadav (2012) examined the relationship between capital structure and the performance of a sample of 237 Malaysian listed companies on the Bursa Malaysia Stock exchange during 1995-2011. The result of the empirical tests indicated that capital structure (especially Total Debt and Short Term debt) negatively impacts performance measured by ROE.

From the above discussion the following hypothesis could be developed:

4. Loans and Advances to Total Assets (LATA)

The Loan and advances to total assets measures the percentage of assets that is tied up in loans. The higher the ratio, the less liquid the bank is Mabwe K.& Robert W(2010).

Local researchers have also researched on the impact of loans to deposit ratio with bank perfrormances.The research made by Andebet (2016) stated that the ratio of loans and

advances to total asset ratio (LATA) is a measure of the percentage of total assets that is tied up in loans and advances. Though the Author claimed that this ratio is the least measure of liquidity, it gives an indication of how much of the bank assets are tied into illiquid loans. The higher this ratio is the less is the liquidity of the bank (Andebet 2016).

***5*. Loans & Advances to Deposit Ratio (LAD)**

One among many liquidity measures is the ratio of loan to deposit (LD).It represents the amount of fund that the banks have extended as loan to their customers from the collected deposits in the period of study. It creates the association between loans and advances that banks extend to customers and deposits they collect. The research by Makri (2014), argued that customers deposit provides main source of income and help the liquidity of bank whose assets are already asset tied up in loans. Eltabakh, Ngamkroeckjoti, & Siad (2014) also made a study and found a statistically significant positive relationship between profitability and loan to deposit ratio. For the banking sector the main source of income comes from interest of loans given to customers and hence there is a positive relation between the ratio of loans and advances to customer deposit and profitability of core business operation of banks.

6. Current Assets to Total Assets Ratio (CATA)

The ratio of current assets to total assets represents the proportion of investment on current assets relative to the total assets of the business entity. The value of this ratio portrays the working capital investment policy of the business .In the study of Tufail (2008) investigation of the impact of working capital policies on profitability was done .The researcher used return on assets as a measure of profitability. In the study Current assets to total assets ratio considered and used to compute the investment policy of working capital management and the author also tried to determine the financing policy of working capital management by taking the ratio of current liabilities to total assets ratio .The author did this research by using Secondary data of 117 textile firms listed on Karachi stock exchange for a period of six years i.e. 2005-2010. The outcome of the regression analysis revealed that aggressiveness of working capital management policies is negatively associated with profitability Results of the regression analysis show that aggressiveness of working capital management policies is negatively associated with profitability. This is evidenced by the works of several researchers (Wang,2002; shin and Soenen ,1993; Lazaridis and Tryfonidis

,2006; Falope and Ajilore,2009). These researchers have used the ratio of current assets to total assets as an independent variable to find its impact on profitability of firms cited in Henok (2015).The empirical result about the relationship between current assets to total assets ratio and return on assets is found to be positive. The author argued that there is a negative relationship between aggressiveness in working capital investment policy and firms' profitability. The author also argued that as current assets to total assets ratio increases, the degree of aggressiveness in working capital investment policy decreases (working capital investment is considered to be aggressive when investment in current asses is low) and profitability of firms' increases.

Weinraub and Visscher (1998) also studied the aggressive and conservative working capital policies by taking 126 industrial firms from 10 diverse industrial groups from a period of 1984 to 1993. The objective of the research was to observe the differences in working capital policies on performance of firms. The variables Current assets to total assets ratio and current liabilities to total asset ratio were used as proxies of working capital investments and financing policies respectively. The result concluded that significant and negative relationship between industry working capital investment and financing policies. The authors claimed that when relatively aggressive working capital investment policies were followed, they were balanced by relatively conservative working capital financing policies. Most of the empirical studies regarding working capital management and profitability relationship support the traditional belief that reducing current assets proportion in total assets, would positively affect the profitability of firm (aggressive policy).

7. Current Liabilities to Total Assets Ratio (CLTA)

Henock (2015) in his study analyzed the correlation between current liabilities to total assets ratio and profitability and found that there is a positive relationship between the current liabilities to total assets ratio and profitability measures. By this, the researcher has claimed that there is a positive relationship between degree of aggressiveness in working capital financing policy and firms' profitability. A business entity is claimed to be aggressive in working capital financing policy when it uses large amounts of current liabilities relative to total sources of funds. The higher the current liabilities to total assets

ratio, the higher is the degree of aggressiveness in working capital financing policy, which leads to the corresponding higher level of profitability

The ratio of current liabilities to total assets indicates the working capital financing policy of the business under consideration. The business entity may adopt either aggressive or conservative financing policy. In an aggressive financing policy a greater portion of current liabilities is used than long-term debts. On the contrary in a conservative policy more long-term debts are used than current liabilities. A number of research works were carried out and the empirical researches claim that there is a positive relationship between current liabilities to total assets. The researches compiled by Kaddumi (2012), Falope and Ajilore (2009) claimed that a direct relation between current liabilities to total assets ratio and profitability exists putting the expected relation between this ratio and profitability to be positive

8. Cost to Income Ratio

The study by D.M.Mathiva (2009) made a research focusing on the relationship between two determinants capital adequacy and cost to income ratio and its relationship with profitability of commercial banks in Kenya with a view to drawing conclusions to what extent they contribute for the performance of banks in Kenya. The author in his research examined closely the capital earnings relationship so as to determine which among the potential explanations of the relationship appear to be important. The conclusion of the author is that the higher the cost to income ratio (CIR), the lower is the profitability of the commercial banks in Kenya and recommended banks to strive in minimizing the cost to income (CIR) ratio as much as possible.

3.8 Model Specification

The student researcher has adopted the model used by akoto,A.V, & angmor,2013; Raheman,2007 and Henok,2015 to depict the impact of working capital management on profitability as follows.

$ROEit=\beta 0 + \Sigma \beta Xit +$ uit

Where:

ROEit: Return on Equity of private commercial banks i at time t.

β0: The intercept of equation;

βi: Coefficients of Xit variables;

*X*it: The different independent variables for working capital Management of the private commercial banks i at time *t (*Time);

uit: The error term;

When the above panel least squares model is converted into specified variables, it becomes:

ROE i,t = β0 + β1(CUR,t) + β2(BSi,t) + β3(DEQi,t) + β4(TCTIi,t) + β5 (LATAi,t)+ β6 (LADi,t)+ β7(CATAit) + + β8(CLTAit)+ εi,

β0=constant

CUR=Current Ratio

BSIZ= Bank Size

DEQ= Debt to Equity

TCTI= Total Cost to Total Income

LATA =Loans and Advances to Total Assets

LAD=Loan and Advances to Deposits

CUATA=Current Assets to Total Assets

CLTA= Current Liability to Total Liability

No.	Independent Variables	Definition	Expected result
1	Current Ratio	The ratio of current assets ato current liabilities(CUR)	Negative and Significant
2	Bank Size	The size of bank measured in natural logarism of total Bank asstes(BSIZE)	Positive and Significant
3	Debt to Equity	The ratio of debt to equity (DEQ)	positive and Significant
4	Loans And Advances to Total Assets	The ratio of loans and advances to total assets(LATA)	positive and Significant
5	Loans &Advances to tatal Diposits	The ratio of loans and advances to deposit (LAD)	positive and Significant
6	Current Assets to Total Asset	The ratio opf current assets to total assets (CATA)	Negative and Significant
7	Current Liabilities to Total Asset	The ratio of current liabilities to total assets (CLTA)	positive and Significant
8	Total cost to Total Income	the ratio of total cost to total incoem	Negative and Significant

Chapter Four

4.1 Data Presentation and Analysis

The previous chapter discussed the methodology and research design for carrying out the research. The chapter has also discussed the population sample size the dependent and independent variables.

Under this chapter, analysis of the collected data was presented .Descriptive analysis and quantitative analysis based on the secondary data was made using a statistical package called stata-13. Important statistical output and the correlation and regression results were discussed accordingly. The classical liner regression model/CLRM/ Diagnostic tests were made. To ensure that the data is valid, it has gone through the basic assumptions of correlations, homoscedasticity and normality tests. The results of the regression come up with a result that the data is fit for the regression analysis.

Panel data is usually processed under random effect model and fixed effect model. After verifying the validity of the data for CLRM, then a choice was made between fixed effect and random effect models to identify the appropriate model for the data. The houseman test result revealed that the random effect model is appropriate for analysing the data. The results of the random effect panel data regression model were presented, and finally the crucial part of the study which discusses the results of the regression analysis is made. The regression results are analysed and compared with similar empirical works and the similarities and differences there on are also discussed below.

4.2. Descriptive Statistics of the variables

This section presents the descriptive statistics of the panel data of all dependent and independent Variables included in the study. The table below gives the mean, minimum, maximum and the standard deviation of each variable in the study. The descriptive analyses result is for the independent variables for the nine private commercial banks in Ethiopia.

Table 4.1 summary statistics

```
. sum ROE CUR BSIZE DEQ LATA LAD CUATA CLTA TCTI

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
         ROE |         54    .1678783    .0521419    .0383241   .3155342
         CUR |         54    .7968928    .4227891    .1373471       2.27
       BSIZE |         54    10.10376    .4373951    9.101308   10.87294
         DEQ |         54    6.204164      1.9921    2.853298   11.70407
        LATA |         54    .4910932    .0569169     .357526   .6277865
-------------+---------------------------------------------------------
         LAD |         54    .6369397    .0716008    .4964608    .871216
       CUATA |         54    .4667507     .220137    .0697162   1.024075
        CLTA |         54    .6561228    .2441388    .1839402   1.079597
        TCTI |         54     .678341    .0937785    .3287567   .9654093
```

Source: Financial statement of sampled commercial banks and own computation through STATA

The above table 4.1 indicated that the mean value of the nine studied private commercial banks return on equity is 16.78 %. The minimum and maximum of ROE is 0.0383241 and 0.3155342. From the value of the standard deviation, it is noted that the standard deviation for performance measure of ROE is 5.2%. This indicates that the dispersion of ROE among the nine sampled commercial banks in Ethiopia is small. Both the maximum and minimum profits were noted by the cooperative bank of Oromia for the years 2014 and 2016 respectively.

The current ratio has a mean of 0.79 and minimum and maximum values of .1373471 and 2.27 respectively. While comparing the performance of the bank with a maximum current ratio of 2.27 with the one with minimum ratio of .1373471.

Bank size on the other hand has a mean value of 10.10, size being measured in log of total assets. It has also 9.10 and 10.87 as a minimum and maximum result respectively. The standard deviation of bank size from the mean is .44.

The result of the analysis for debt to equity revealed that the private commercial banks in Ethiopia have a mean value of 6.20. It has also 2.85 and 11.70 as a minimum and maximum value respectively. The standard deviation of debt to equity ratio from the mean is 1.99 as indicated in the summary statistics.

The result of the analysis revealed that the ratio of loans and advances to total assets is found to be 6.204164. The maximum and the minimum values are 2.853298 and 11.70407 respectively. The standard deviation from the mean value is 1.9921

The result of the analysis revealed that the mean value of the ratio of loans and advances to deposit is found to be .6369397. The maximum and the minimum values are .4964608 and .871216 respectively. The standard deviation from the mean value is .0716008. as cited by Eyob(2018) the international standard for loans to deposit ratio is 75% (CBRC 2012).when this is compared to the figure, the study revealed that the result is a bit lower (64%). From the analysis it could be concluded that on average for the commercial banks in Ethiopia a lower amount of volatile deposits were tied up with illiquid loans. The result also indicated that the dispersion is small (There is a moderate dispersion of LAD towards its mean value among banks that is shown by the standard deviation of 7%).

The result of the analysis revealed that the mean value of the ratio of current assets to total assets .4667507. The maximum and the minimum values are .0697162 and 1.024075 respectively. The standard deviation from the mean value is .220137.

The result of the analysis revealed that the mean value of the ratio of current assets to total assets .4667507. The maximum and the minimum values are .0697162 and 1.024075 respectively. The standard deviation from the mean value is .220137.

The result of the analysis revealed that the mean value of the ratio of current liability to total assets .6561228. The maximum and the minimum values are .1839402 & 1.079597 respectively. The standard deviation from the mean value is .2441388.

The result of the analysis for the mean value of the ratio of total cost to total income is found to be .678341. The maximum and the minimum values are .3287567 and .9654093 respectively. The standard deviation from the mean value is .0937785.

4.3 Testing assumptions of classical linear regression model (CLRM)

After ensuring that the random effect model is more appropriate for the data processing, the first step was testing for the assumption of CLRM. Ensuring that the data and the model fit with classical linear regression model assumptions is vital. The assumption of CLRM claims that the model for this study was fit or not.

Study made by Brooks (2008), the first assumption required that the average value of the errors is zero (E (ut) = 0). In fact, if a constant term is included in the regression equation, this assumption will never be violated. Therefore, since the constant term (i.e. α) was included in the regression equation, the average value of the error term in this study was expected to be zero.

I. Test for Normality Assumption

Under the normality assumption, which is for the given X's, the mean value of the disturbance/residual ε it is zero, is extremely important for the purposes of hypothesis testing and prediction (Gujarati, 2004).Disturbances/ residuals are the difference between the observed and model-predicted values of the dependent variables. A histogram helps us to check the assumption of normality of the error term. As we can see from figure 4.5 below, the shape of the histogram approximately follow the shape of the normal curve. This histogram is acceptably close to the normal curve in our mode. Normality test is used to determine whether the error term is normally distributed. Brooks (2008) noted that the Jarque-Bera statistic would not be significant for disturbance to be normally distributed around the mean. The purpose of the Jarque-Bera test is to make sure that the data set is well-modeled by a normal distribution. The hypothesis for the normality test was formulated as follow:

H0: Error term is normally distributed

H1: Error term is not normally distributed

$\mathfrak{V}$ (Significance level) = 0.05

Decision Rule:

Reject H0 if P value of JB less than significant level 0.05. Otherwise, do not reject H0

The table below shows the stata output for normality test

Table 4. 2 Sktest uhat result from stata software version 13

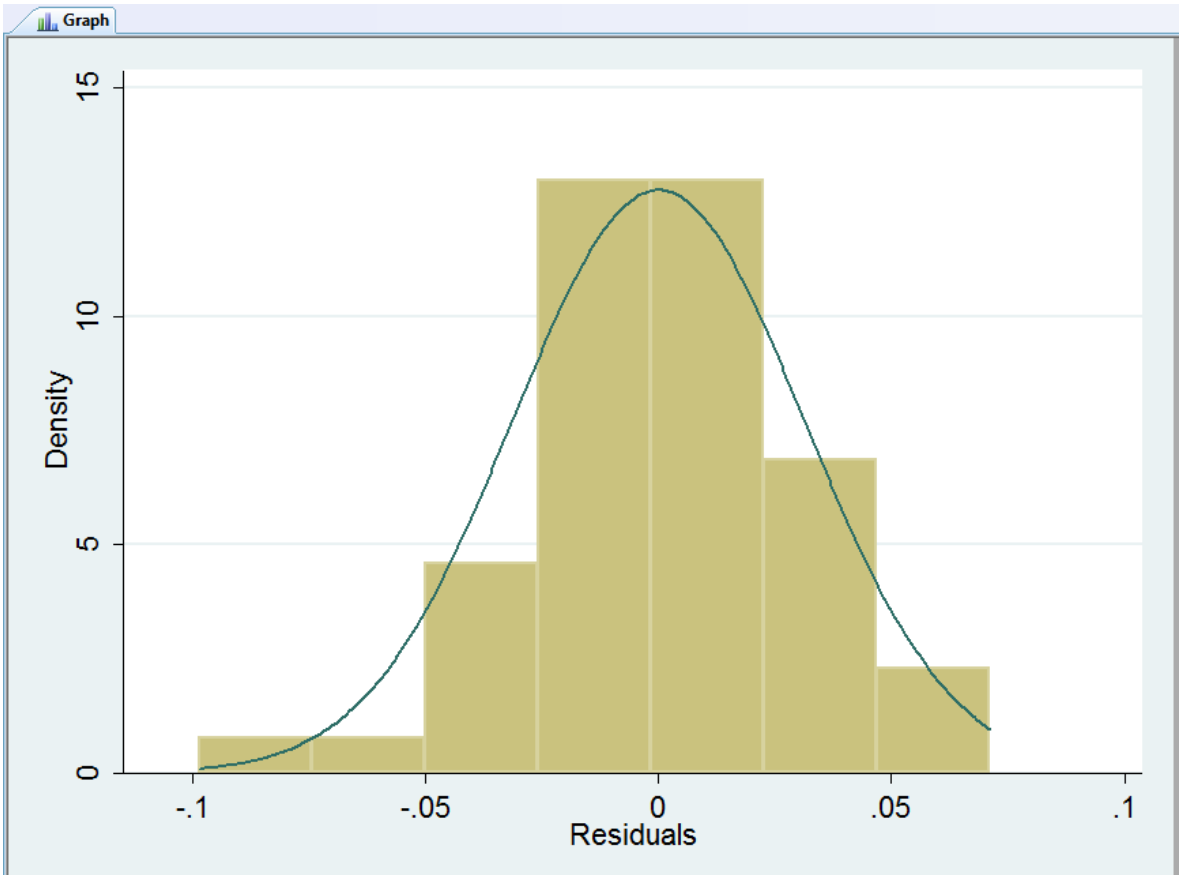
```
. sktest uhat

                    Skewness/Kurtosis tests for Normality
                                                              ------- joint -------
    Variable |   Obs   Pr(Skewness)   Pr(Kurtosis)  adj chi2(2)     Prob>chi2
-------------+------------------------------------------------------------------
        uhat |    54       0.5013         0.1519         2.64          0.2676
```

Source: Financial statement of sampled commercial banks and own computation through STATA

the above table shows that the p valuie is above the level of significance at 5%(26%) and hence accept the null.This implies that there is no problem in the distribution of the error terms (they are norrmally distributed).

Pic 4.3 Normality Test Result of Stata 13 by the Researcher.



Source: Financial statement of 9 sampled commercial banks and own computation through STATA

Table 4.4Stata 13 Result for Skewness and Kurtosis by the Researcher

```
. sum uhat,detail

                        Residuals
-------------------------------------------------------------
      Percentiles      Smallest
 1%    -.0986579      -.0986579
 5%     -.046101      -.0517932
10%    -.0380196       -.046101       Obs                  54
25%    -.0184032      -.0437495       Sum of Wgt.          54

50%     .0012052                      Mean           5.61e-11
                       Largest       Std. Dev.      .0312545
75%     .0191212       .0449102
90%     .0418117       .0524833       Variance       .0009768
95%     .0524833       .0623269       Skewness      -.2037375
99%     .0712723       .0712723       Kurtosis       3.764789
```

Source: Financial statement of 9 sampled commercial banks and own computation through STATA

Ensuring whether the disturbances are normally distributed or not is one of the assumptions of CLRM. Hence the normal distribution is not as such skewed and is defined to have a coefficient of kurtosis 3.76.The coefficient for skewedness is found to be -.20 Accordingly one of the most commonly applied tests for normality was the Bera-Jarque (BJ) test.This tests the residuals for normality and testing whether the coefficient of skewedness and kurtosis are zero and three respectively. By Skewness we measure the extent to which the data distribution is symmetric about its mean value and kurtosis measures how far the tails of the distribution are from the mean. If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant (sktestuhat result in the stata would have a p value >.05) to not reject the null of normality at the 5% significance level (Brooks 2008). The indicated result is 26% which is well above the significance level as indicated under table 4.2 above.

II. Test for Multicollinearity Assumption

The table below shows Correlation analysis which depicts the connections between all the variables (independent Variables). The correlation analysis under table 4.5 below shows that there is no significant correlation between the independent variable.

Table 4.5 Stata 13 Result of Correlations by the Researcher

```
. corr CUR BSIZE DEQ LATA LAD CUATA CLTA TCTI
(obs=54)
```

	CUR	BSIZE	DEQ	LATA	LAD	CUATA	CLTA	TCTI
CUR	1.0000							
BSIZE	-0.4328	1.0000						
DEQ	-0.3055	0.6068	1.0000					
LATA	-0.0236	0.4950	0.3256	1.0000				
LAD	0.1460	0.1267	-0.1193	0.7942	1.0000			
CUATA	0.3759	-0.4889	-0.1299	-0.0737	0.1446	1.0000		
CLTA	-0.5183	0.0243	0.2390	0.0308	-0.0084	0.4774	1.0000	
TCTI	-0.0034	0.1745	0.3824	0.2084	0.0276	0.0178	0.0750	1.0000

Source: Financial statement of sampled commercial banks and own computation through STATA

From the correlation table (Table 4.5) above ,we can say that there are no strong correlations between variables: The current ratio, bank size debt to equity, loans and advances to total assets ratio, loans and advances to deposit ash ratio, current assets to total assets, current liability to total assets and total cost to total income.

Collinearity is one of the assumptions of CLRM and concerned with the existence of relationship between explanatory variables. If an independent variable is an exact linear combination of the other independent variables, then we say the model suffers from perfect collinearity, and it cannot be estimated by OLS as claimed by Brooks (2008). The condition of multicollinearity exists where there is high, but not perfect, correlation between two or more explanatory variables (Cameron and Trivedi 2009; Wooldridge 2006). Churchill and Iacobucci (2005) stated that when there is multicollinearity, the amount of information about the effect of explanatory variables on dependent variables decreases. As a result, many of the explanatory variables could be judged as not related to the dependent variables when in fact they are. This assumption does allow the independent variables to be correlated; they just cannot be perfectly correlated. If we did not allow for any correlation among the independent variables, then multiple regressions would not be very useful for econometric analysis.

Even if how much correlation causes multicollinearity is not clearly defined, there is an argument provided by different authors. The statement by Hair et al (2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem.

Therefore, in this study correlation matrix for the eight independent variables were shown under table 4.5 above. From the result of correlation matrix, the highest correlation value of 0.79 was observed between loans and advances to deposit ratio and loans and advances to total asset ratio. Since there is no correlation value above 0.9 according to Hair et al (2006), it is possible to conclude that there was no multicollinearity problem among the independent variables in this study.

III. Test for Heteroscedasticity assumption

When the scatter of the errors is different, varying depending on the value of one or more of the independent variables, the error terms are heteroskedastic Brooks (2008). Heteroscedasticity test is very important because if the model consists of heteroskedasticity problem, the OLS estimators are no longer BEST and the error variances are incorrect, therefore the hypothesis testing, standard error and confident level will be invalid. The result of the hettest come up with a p value of 34.73% which is well above the level of significance at 5%. This confirms that the hetroscedasticity assumption is not violated. The hypothesis for the heteroskedasticitytest could be stated as in here below;

Ho: There is no homoskedasticity problem.

H1: There is homoskedasticity problem.

Decision Rule:

Reject H0 if P value of imtest, white result is less than the significant level of 0.05.

Otherwise, do not reject H0

The table below shows the **sktest,white** result processed by the Stata 13 shows that the P – Value is 20% and this is above the significance level of 5% and hence it could be concluded that there is no homoscedasticity problem.

Pic 4.6 Heteroscedasticity Test Result of Stata 13 by the Researcher

```
. imtest,white

White's test for Ho: homoskedasticity
         against Ha: unrestricted heteroskedasticity

         chi2(44)     =     51.46
         Prob > chi2  =    0.2049

Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	51.46	44	0.2049
Skewness	17.74	8	0.0233
Kurtosis	0.68	1	0.4099
Total	69.88	53	0.0600

4.3 Choosing Fixed Versus Random Effect Model

The collected data were estimated based on the panel model, which included cross sectional and time series observations for nine commercial banks for the period from 2014 to 2019.It is customary practice in the data processing of longitudinal data to choose between the fixed effect model and the random effect model. These are the commonly used models for the panel data. In order to choose fixed or random effect model, a formal test called hausman test was used which was based on the null hypothesis in favour of random effect model estimator. When the test is made it is important to see the p-value because the decision was made on the basis of this value. Accordingly if p value is higher than 0.05 (i.e. it is insignificant) hence random effects is preferable whereas if p value is lower than 0.05 (i.e. it is significant) fixed effect is preferable (Gujarati 2004;Nigist 2016). The result of the hausman test shows that the random effect is the appropriate model to process the panel data .The result of the hausman test for this panel data model is shown in table 4.9 below.

4.5 Results of the Regression Analysis

Here the results of Random effect regression model are presented and interpreted. The regression results have their own implications, and hence beta indicates each variable's level of influence on the dependent variable (return on equity) which may have a coefficient of negative or positive. P-value indicates at what percentage or precession level of each variable is significant and R2 values indicate the explanatory power of the model

and in this study over all R2 value which takes into account the loss of degrees of freedom associated with adding extra variables were inferred to see the explanatory powers of the models. Therefore, the results of Random effect regression model in this study were presented in table 4.8 below.

$$ROE_{i,t} = \alpha i + \beta 1(CUR,t) + \beta 2(BSIZEi,t) + \beta 3(DEQi,t) + \beta 4(TCTIi,t) + \beta 5\ (LATAi,t) + \beta 6\ (LADi,t) + \beta 7(CATAit) + + \beta 8(CLTAit) + \varepsilon i,$$

$$ROE = .2 + .002CUR + .017BSIZE + .009DEQ + .32LATA - .19LAD - .023CUATA - .012CLTA - .4TCTI$$

where;

CUR=Current Ratio

BSIZ= Bank Size

DEQ= Debt to Equity

TCTI=Total Cost to Total Income

LATA =Loans and Advances to Total Assets

LAD=Loan and Advances To deposits

CUATA=Current Assets to Total Assets

CLTA=Current Liability to Total Liability

In the following, the result of the fixed effect model, random effect model, and the hausman test for choosing the appropriate model for the data.

Table 4.7 Result of Fixed Effect Regression Model

```
. xtreg ROE CUR BSIZE DEQ LATA LAD CUATA CLTA TCTI,fe

Fixed-effects (within) regression               Number of obs      =        54
Group variable: ID                              Number of groups   =         9

R-sq:  within  = 0.5939                         Obs per group: min =         6
       between = 0.0908                                        avg =       6.0
       overall = 0.3266                                        max =         6

                                                F(8,37)            =      6.76
corr(u_i, Xb)  = -0.2960                        Prob > F           =    0.0000

------------------------------------------------------------------------------
         ROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         CUR |   .0008847   .0280532     0.03   0.975    -.0559566     .057726
       BSIZE |   .0459102   .0289061     1.59   0.121    -.0126592    .1044796
         DEQ |  -.0059228   .0061218    -0.97   0.340    -.0183267     .006481
        LATA |   .0912904   .2749634     0.33   0.742    -.4658384    .6484191
         LAD |  -.1199892   .1921919    -0.62   0.536     -.509407    .2694285
       CUATA |  -.0100589   .0716081    -0.14   0.889    -.1551507    .1350328
        CLTA |  -.0580406   .0572174    -1.01   0.317     -.173974    .0578928
        TCTI |   -.327334   .0539347    -6.07   0.000    -.4366161   -.2180519
       _cons |   .0364681   .2518902     0.14   0.886    -.4739099     .546846
-------------+----------------------------------------------------------------
     sigma_u |  .03795412
     sigma_e |  .03028905
         rho |  .61092056   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(8, 37) =     2.43                 Prob > F = 0.0321
```

Source: Financial statement of sampled commercial banks and own computation through STATA

Table 4.8 Result of Random Effect Regression Model

```
. xtreg ROE CUR BSIZE DEQ LATA LAD CUATA CLTA TCTI,re

Random-effects GLS regression                   Number of obs      =        54
Group variable: ID                              Number of groups   =         9

R-sq:  within  = 0.5003                         Obs per group: min =         6
       between = 0.8758                                        avg =       6.0
       overall = 0.6407                                        max =         6

                                                Wald chi2(8)       =     80.25
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ROE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CUR	-.0021211	.0239392	-0.09	0.929	-.049041	.0447989
BSIZE	.0169623	.0181889	0.93	0.351	-.0186872	.0526118
DEQ	.0088273	.0038706	2.28	0.023	.001241	.0164136
LATA	.3190416	.2122241	1.50	0.133	-.09691	.7349932
LAD	-.1948294	.1543456	-1.26	0.207	-.4973412	.1076823
CUATA	-.0228562	.047794	-0.48	0.632	-.1165308	.0708184
CLTA	-.0116269	.0439057	-0.26	0.791	-.0976806	.0744268
TCTI	-.4035843	.0547109	-7.38	0.000	-.5108157	-.2963529
_cons	.2028995	.1733877	1.17	0.242	-.1369342	.5427332
sigma_u	0					
sigma_e	.03028905					
rho	0	(fraction of variance due to u_i)				

Source: Financial statement of sampled commercial banks and own computation through STATA

Tables 4.9 Hausman Test to Select Between Fixed Effect & Random Effect

```
. hausman fe re
```

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
CUR	.0008847	-.0021211	.0030058	.0146253
BSIZE	.0459102	.0169623	.0289479	.0224662
DEQ	-.0059228	.0088273	-.0147501	.0047428
LATA	.0912904	.3190416	-.2277512	.1748308
LAD	-.1199892	-.1948294	.0748402	.1145215
CUATA	-.0100589	-.0228562	.0127972	.053324
CLTA	-.0580406	-.0116269	-.0464137	.0366894
TCTI	-.327334	-.4035843	.0762503	.

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

  Test:  Ho:  difference in coefficients not systematic

              chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                      =         9.76
            Prob>chi2 =       0.2820
            (V_b-V_B is not positive definite)
```

Source: Financial statement of sampled commercial banks and own computation through STATA

4.6 The Regression Results

This section discusses the regression results and makes comparative analysis with related literatures provided in chapter two of this study. Accordingly, the relationship between dependent and independent variables are discussed and interpreted.

The main objective of data mining is to develop the best model after a number of tests so that the model finally chosen is a good model in the sense that all the estimated coefficients have the right signs, they are statistically significant on the basis of F tests, the *R*2 and the overall R2 value is reasonably high and the Durbin–Watson (*d)* has acceptable value around 2 (Gujarati, 2004).

Pallant,(2007) cited in Ephrem, (2018), it has been stipulated that in the case where. a small sample is taken , the adjusted R2 Value should be considered as it provides more accurate estimation of the true population value. It has been stated that as a rule of thumb when the adjusted R2 value is : < 0.1: it is a poor fit ,when it ranges between, 0.11 to 0.30 it is claimed to be a modest fit: and when it ranges between 0.31 to 0.50,: moderate fit, >0.50: strong fit (Muijs, 2004,).To evaluate the study models, the value of R2 has been considered to determine the amount of variance in the dependent variables which is explained by all variables in the formula (Pallant,2007).

From the above table 4.8, the regression result of Random effect model indicated that the coefficient of determination of R-squared and the overall R2 50% and 64% respectively. The result indicated that 64% of the Change in return on equity of the private commercial banks in Ethiopia are successfully explained by the chosen independent variables (current ratio, bank size, debt to equity, loans and advances to total assets, loans and advances to customer deposits, current assets to total assets, current liabilities to total assets and total cost to total revenue) Whereas the remaining 36% changes in return on equity used to measure profitability of such banks are caused by other variables which were not included in the model. The rate found here indicated that the variables included in the model were moderately strong to explain the dependent variable (return on equity) by the independent variables.

From the regression analysis seen in the above table, the coefficients to the ratio of debt to equity and total cost to total income are found to be significant at 5% confidence interval with coefficients of .0088273 and -.4035843 respectively. All the remaining independent

variables taken in the study were not significant to influence return on equity at 5% confidence interval.

No.	Independent Variables	Definition	PVALUE	Expected Result	Coefficient	Actual Result
1	Current Ratio	The ratio of current assets ato current liabilities(CUR)	0.929	Negative and Significant	-0.002	Negative but insignificant at 5% sign.Level
2	Bank Size	The size of bank measured in natural logarism of total Bank asstes(BSIZE)	0.351	Positive and Significant	0.017	positive but insignificant at 5% sign.Level
3	Debt to Equity	The ratio of debt to equity (DEQ)	0.023	Positive and Significant	0.009	Positive and Significant
4	Loans And Advances to Total Assets	The ratio of loans and advances to total assets(LATA)	0.133	Positive and Significant	0.32	positive and insignificant at 5% sign.Level
5	Loans &Advances to tatal Diposits	The ratio of loans and advances to deposit (LAD)	0.207	positive and Significant	-0.19	Negatve but insignificant at 5% sign.Level
6	Current Assets to Total Asset	The ratio opf current assets to total assets (CATA)	0.632	Negative and Significant	-0.023	Negative but insignificant at 5% sign.Level
7	Current Liabilities to Total Asset	The ratio of current liabilities to total assets (CLTA)	0.791	Positive and Significant	-0.012	Negative but insignificant at 5% sign.Level
8	Total cost to Total Income	the Ratio of total cost to total income	0.000	Negative and Significant	-0.4	Negative and Significant

Source: Financial statement of sampled commercial banks and own computation through STATA and own comp

4.7. Discussion

In the above table, the result of the regression analysis has been put and those significant variables were identified with their respective coefficients. Data was interpreted and discussed by comparing the finding with the theory and evidence found from previous empirical studies.

- **Current Ratios and and ROE**

The Liquidity of the organization can be tested through different ratios that include current ratio. The study made by Njure (2014) probed the relationship between liquidity and profitability of nonfinancial firms on the Nairobi securities exchange by covering 39 listed entities. While calculating correlation and regression analysis return on assets was the indicator for profitability of companies while current ratio, quick ratio and the absolute liquid ratio were used as liquidity measures. The study indicated a significant positive relationship between the selected determinants. The result of the student researcher here comes up with a negative association between current ratio and return on equityNjure, K. C. (2014).Similar researches by Osuma, Romanus, Ndigwe & Nkwodimmah (2018),

Vijaykumar and Venkatachalam (1995),Ayichelet K.(2018),Godswill, Ailemen, Osabohien, Chisom Pasca (2018), Eyob K. (2019) also have come up with similar results.

- **Bank Size and ROE**

The research work by valentina f. calvin m. and lilianas (2009) poised that size signals specific bank risk, although the expected sign is ambiguous. On the other hand boyd and runkle (1993) find a significant inverse relationship between size and rate of return on assets in U.S .A. Banks from1971 to 1990. Berger, et al. (1987) develops a set of scale and product mix measures for evaluating the competitive viability of firms, and applies it to 1983 data.The results shows that as product mix and **scale** increases, banks experience some diseconomies, implying a negative relation between size and returns.

The researcher here found that there is a positive relationship between bank size and return on equity, where bank size is measured by log of total assets.

The research result here is also confirmed by researches made by Ephrem ,2018; Aragaw 2015; Piabuo,2016;Athanasouglau, Brissimis and Delis, 2005;Gul,Irshad and Zaman ,2011;,Ephrem ,2011;Tufail ,2008).

- **Loan and advances to Deposit Ratio and ROE**

The study of loan to deposit ratio is measured by the ratio of the total loan and advance disbursed by Ethiopian private commercial banks to their customer total deposit in the banks. The sign of the coefficient for the ratio of loan to deposit is had negative and statistically insignificant at 5% significant level with p value of 0.207 and coefficient value of -.119. The coefficient values indicate that if 1 birr rise/decline in total loan and advance to deposit ratio results in 0.119 birr decline /rise in financial performance of Ethiopian commercial banks showing inverse relationship. It is concluded that there is a negative relationship and this result is in agreement with similar researches made by Aragaw ,2015;Gamlath,&Rathiranee(ND);Eltabakh,Ngamkroeckjoti,&Siad,2014;Eltabakh,Ngamkroeckjoti, &Siad ,2014).

Current Assets to Total Asset Ratio and ROE

The result of the regression model revealed that the ratio of current asset to total assets and current liabilities to total assets are not significant to influence the return on equity at 5% significance level. While reviewing prior research works different results were found. The research made by Henock (2015) claimed that there is a negative relationship between excessive investment in working capital and profitability.Another research work by Vishnani& Shah, (2007) also support the points raised by Henock in that if unjustifiable investment is made on current assets, this would negatively affect the rate of return on investment. A study by rosyeni rasyid,(2017) also examined the impact of working capital management and its policies (investment and financing) on the performance of the scheduled commercial banks listed in pakistan stock exchange for the period of 2009-2013. The author took the performance measures with return on asset (ROA), return on equity (ROE) and cash to cash equivalent (CCE). Working capital management has been measured with cash conversion cycle (CCC), current liabilities to total asset (CL/TA) and current asset to total asset (CA/TA). The results revealed from the selected 30 sampled commercial banks that there is a negative relationship between CA/TA, and CL/TA with ROA and ROE.

Though not significant at 5% confidence level, the student researcher here comes to the conclusion that ratifies the claims put forward by the above researchers.

- ## Current Liabilities to Total Assets and ROE

The research work made by many authors claimed that there is a positive relationship between the ratio of current liabilities to total assets and firm performances.Henock Y. (2015) claimed that there is a positive relationship between aggressive working capital financing policy on firms' profitability. This implies that the increase in current liabilities to total assets ratio will significantly and positively affect profitability of the firms. The researcher argued that the higher the amount of current liabilities the firm uses to finance its working capital assets, the more profitable the firm will be, implying that there is strong positive relationship between aggressiveness in working capital financing and firms' profitability. Similar results were found in previous findings of Kaddumi, 2012; Falope and Ajilore, 2009.

Henock(2015) also further analyzed the correlation between current liabilities to total assets ratio and profitability and found that there is a positive relationship between the current liabilities to total assets ratio and profitability measures. By this, the researcher has claimed that there is a positive relationship between degree of aggressiveness in working capital financing policy and firms' profitability. A business entity is claimed to be aggressive in working capital financing policy when it uses large amounts of current liabilities relative to total sources of funds. The higher the current liabilities to total assets ratio, the higher is the degree of aggressiveness in working capital financing policy, which leads to the corresponding higher level of profitability to the firm.

But the analyses of the student researcher here come up with a result that opposes the above claims. The result reveals that an increment of a dollar in financing current assets with current liabilities would impact by in decreasing of return on equity by about 10 cents.

The higher the amount of current liabilities the firm uses to finance its working capital assets, the more profitable the firm will be and the lower the ratio implies that the lower would be the profitability. This implies that there is strong positive relationship between aggressiveness in working capital financing and firms' profitability.

- **Current Assets to Total Assets and ROE**

The empirical result about the relationship between current assets to total assets ratio and return on assets is found to be positive Tufail, 2008; Kaddumi, 2012; Afza and Nazir, 2007). The author argued that there is a negative relationship between aggressiveness in working capital investment policy and firms' profitability. The authors also argued that as current assets to total assets ratio increases, the degree of aggressiveness in working capital investment policy decreases (working capital investment is considered to be aggressive when investment in current asses is low) and profitability of firms' increases.

- **Total Cost to Total Income and ROE**

The cost to income ratio, alternatively called the efficiency ratio or expense to income ratio examines its usefulness as a measure of bank performance. The regression result of cost to income ratio is found significant at 5% level of significance. The result indicated that it impacts return on equity are negatively. Result of the analysis brought that a unit change in the ratio of cost to income decreases return on equity by a 0.32. This result is in agreement

with researches made by a number of research authors. The study by D.M.Mathiva (2009) for example corroborates this finding by focusing on the relationship between two determinants: capital adequacy and cost to income ratio and it relationship with profitability of commercial banks in Kenya with a view to drawing conclusions to what extent they contribute for the performance of banks in Kenya. The author examined closely the capital earnings relationship so as to determine which among the potential explanations of the relationship appear to be important. The conclusion of the author is that the higher the CIR, the lower is the profitability of the commercial banks in Kenya and recommended banks to strive in minimizing the cash to income (CIR) ratio as much as possible.

A similar study by David T. (1998) poised that other things being equal (rare cases)

Banks with lower cost to income ratio are likely to be more profitable.

Chapter Five

Summary of Major Findings, Conclusion and Recommendations

In this chapter the researcher presents his conclusion from the overall overviews of the research by adding the main findings of the analysis and give insights for similar researches in future.

5.1 major findings and Conclusion

The aim of this study is to show the impact of working capital management on financial performance of Ethiopian private commercial banks through the variable explaining working capital. From the sixteen private commercial banks in operation, the researcher has taken a sample of nine private commercial banks which are operating in the financial service sector in Ethiopia for six years ranging from 2014 to 2019.The student researcher has identified eight independent variables which have effect on the financial performances of Ethiopian private commercial banks performance measured in return on owners' equity. Panel data was used for those nine private commercial banks for the stated period. The data collected from the national bank of Ethiopia and from the individual bank's website was presented using descriptive statistics. The Data was also analyzed by correlation and regression analysis for financial performance. Before applying OLS regression, data were scrutinized to pass the tests of the classical linear regression model assumptions. Result of running the data for the assumptions of the CLRM, it was found that the data fulfill the models basic assumptions of the CLRM.

The choice between fixed effect and random effect model was selected by using the Hausman test and the result proposed that random effect model is appropriate for processing the data in the Stata 13 software. Among the eight independent variables chosen for the analysis, two were found to significantly affect the return on equity of the commercial banks in Ethiopia for the stated period.

The independent variables found significantly affecting the performance of commercial banks in Ethiopia are debt to equity and total cost to total income. The OLS regression result has shown that a unit increment in debt to equity will increase return on equity by .08.this indicates that there is a significant positive relationship between the ratios of DEQ and ROE.

On the contrary the variable total cost to total income indicated that the variables significantly and negatively affect the profitability of the private commercial banks under the study. A unit increment in the ratio of total cost to total income ratio brings a decrease of .40 units in the return on equity.

From the eight independent variables the remaining six variables were not significantly influencing the return on equity at the 5% significance level. These are current ratio, bank size, loans and advances, loans and advances to deposit, current assets to total assets, and current liability to total assets.

Table 5.1Summary of actual versus expected results of explanatory variables on ROE

No.	Independent Variables	Definition	Expected Result	Actual Result
1	Current Ratio	The ratio of current assets ato current liabilities(CUR)	Negative and Significant	Negative but insignificant at 5% sign.Level
2	Bank Size	Measured in Natural logarism of total Bank asstes(BSIZE)	Positive and Significant	positive but insignificant at 5% sign.Level
3	Debt to Equity	The ratio of debt to equity (DEQ)	Positive and Significant	Positive and Significant at 5% sign.Level
4	Loans And Advances to Total Assets	The ratio of loans and advances to total assets(LATA)	Positive and Significant	positive and insignificant at 5% sign.Level
5	Loans &Advances to tatal Diposits	The ratio of loans and advances to deposit (LAD)	positive and Significant	Negatve but insignificant at 5% sign.Level
6	Current Assets to Total Asset	The ratio opf current assets to total assets (CATA)	Negative and Significant	Negative but insignificant at 5% sign.Level
7	Current Liabilities to Total Asset	The ratio of current liabilities to total assets (CLTA)	Positive and Significant	Negative but insignificant at 5% sign.Level
8	Total cost to Total Income	the Ratio of total cost to total income TC/TC	Negative and Significant	Negative and Significant at 5% sign.Level

Source: Researcher own computation

Table 5.2 Summary of Comparison with Prior Empirical Results

No	Independent variable	Researchers Name	Result by the researchers	Current Result
1	**Current Ratio**	Osuma,Romanus,Ndigwe&Nkwodimmah(2018),Vijaykumar and Venkatachalam (1995),Ayichelet K.(2018),Godswill, Ailemen, Osabohien, Chisom Pasca(2018),Eyob K. (2019),	Negative significant	**Negative but insignificant**
		Gamlath,& Rathiranee(ND).Adamu(2015) ,Tufail (2008) ,Ammar A. G., & Masood A.(2013),	Positive significant	
		Ephrem A.(2018)	Positive but insignificant	
2		Ephrem A.(2018),Aragaw H.(2015),Piabuo (2016) ,(Athanasouglau, Brissimis and Delis, 2005). Gul, Irshad and Zaman (2011) ,Ephrem w(2011),Tufail (2008) ,	Positive significant	
		Ayichelet K.(2018)	Negative but insignificant	
3	**Debt to equity**	Ephrem A.(2018) ;Tufail (2008) ;Niman.I(2015)	Negative significant	**positive and significant**
		Serge Piabuo Mandiefe(2016)	Positive significant	
4	**Loand and Advances to total Assets**		Negative significant	**positive but insignificant**
		Vijaykumar and Venkatachalam (1995),	Positive significant	
5	**Loand and Advances to Deposits**	Eyob K(2019)	Negative significant	**Negative but insignificant**
		Aragaw H.(2015),Gamlath,& Rathiranee(ND).Eltabakh, Ngamkroeckjoti, & Siad (2014) ,Eltabakh, Ngamkroeckjoti, & Siad (2014)	Positive significant	
			Negative but insignificant	
6	**current assets to total assets versus performance**	,Weinraub and Visscher (1998),Tufail (2008),Wang (2002), shin and Soenen (1993), Lazaridis and Tryfonidis (2006), Falope and Ajilore (2009),Henok Y (2015).Weinraub and Visscher (1998)	Negative significant	**Negative but insignificant**
		Tufail(2008) ,Kaddumi(2012), Afza and Nazir (2007)	Positive significant	
		Henok(2015),	Negative but insignificant	
7	**current Liability to total assets versus performance**	Tufail, 2008, Weinraub and Visscher (1998), Afza and Nazir (2007)Afza and Nazir (2008)	Negative significant	**Negative but insignificant**
		Kaddumi(2012), Falope and Ajilore (2009),Henok Y. (2015),Abor (2005) Mabwe Kumbirai and Robert Webb, 2010	Positive significant	
		Henok(2015)	Negative but insignificant	
8	**Total cost to total Income**	D.M. Mathuva , 2009,Ahmad Aref ALMAZARI (2013),Hess and Francis (2004),Ghosh et al. ,2003,Mabwe Kumbirai and Robert Webb, 2010	Negative significant	**Negative and significant**
		Dawit B.(2017),	Negative but insignificant	

5.2 Recommendation

Based on the findings of the research work, the following recommendations were given:

1. The result suggests that debt to equity ratio has a positive and significant effect on the ROE. Therefore Management of private commercial banks should use external financing at an optimal level with the mission of achieving a better result in maximizing the shareholders return.
2. The result also revealed that there is a negative and significant relationship between cost to income ratio of private commercial banks and the return on owners' equity. Therefore the bank management is recommended to cut costs to maximize the return for the shareholders. Where both cost and income increases, management should work hard in increasing the income of the bank at an increasing rate and reducing the cost increment at decreasing rate would maximize the return to the shareholders.

3. Bank size and Loan and Advances to total Assets ratios are found to have a positive but insignificant effect on the return on equity at confidence 5% level..
4. Loans and Advances to Deposits ratio, current assets to total assets ratio and current Liability to total assets ratio were found to have positively related but with insignificant effects at confidence 5% level.

The researcher here recommends Managers of private commercial banks to try to balance liquidity, efficiency solvency and bank performances to maximize the final result achieved by the owners of the bank(high return) by avoiding unnecessary cost (high investment in current assets and incurring high financing cost and also , efficiently administering office running costs (administrative cost).

5.3 Suggestion for Further Research

As indicated in the previous sections, the student researcher did not find significant relationship between return on equity and the bank size, the ratios of loans and advances to total assets, loans and advances to deposit ratio, investing and financing policies on working capitals of private commercial banks. Hence further research works are needed by extending the sampling method the sample size and adding dependent and independent variables to see the effect of the variables found insignificant in this research work.

The researcher here believes that this work shall serve as a spring board for further researches to be made in the future under the title of working capital management and its impact on profitability. The following points could be proposed.

1. While reviewing the related literatures, the researcher has come to understand that there a lack of local research works in Ethiopia under the title specific to the banking sector. This could be used as a starting work and deeper research could be made by adding more variables including external variables and by extending the time horizon. The study could be extended by using more data by incorporating most of the commercial banks if not all.
2. The researcher here has used secondary data for making the analysis. Future researches could be extended by including primary data.
3. The research result here is solely based on the selected variables. There are many more dependent and independent variables that could be used

to assess the impact of working capital managements on performance of banking businesses. Results estimated from this study should be evaluated keeping in mind that there could be many other dependent and independent variables whose relationship could be studied and hence the study here limited only to the effect of the eight selected dependent variables impact on the dependent variable. Therefore further study can be extended by including and /or changing some other variables in the model.

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ANNEXES

Sample Bank Data for the Analysis

			1	2	3	4	5	6	7	8
ID	year	ROE	CUR	BSIZE	DEQ	LATA	LAD	CUATA	CLTA	TCTI
ORM	2014	0.206198	0.640426	9.78899	7.21842	0.411533	0.505918	0.450000	0.702658	0.623311
ORM	2015	0.223377	0.697651	9.97931	Reject	-0.002	0.619876	0.550000	0.78836	0.717712
ORM	2016	0.190538	0.486643	Positive a	7.59622	0.017	0.600307	0.420637	0.864365	0.786219
ORM	2017	0.180201	0.48377	positive a	8.83066	0.009	0.601976	0.42557	0.879695	0.74653
ORM	2018	0.28081	0.650737	10.3765	8.1828	0.32	0.581616	0.568017	0.872884	0.619981
ORM	2019	0.200899	0.629541	10.5021	7.5599	-0.19	0.647429	0.544634	0.86513	0.690111
CBO	2014	0.315534	0.793245	9.86631	5.74113	-0.023	0.628263	0.653869	0.824297	0.461445
CBO	2015	0.221444	0.770405	10.0593	7.12388	-0.012	0.871216	0.653869	0.848735	0.607716
CBO	2016	0.038324	1.01723	10.0221	9.3084	-0.4	0.654959	0.866711	0.852032	0.965409
CBO	2017	0.143644	0.812123	10.2496	11.2800	0.536182	0.643867	0.691652	0.851659	0.822833
CBO	2018	0.142192	0.74633	10.4755	11.5807	0.506722	0.58684	0.656408	0.879515	0.766504
CBO	2019	0.159114	0.632166	10.6211	11.7041	0.450000	0.550000	0.582405	0.921285	0.793448
WEG	2014	0.148512	0.830039	10.0509	4.37668	0.371508	0.498109	0.466659	0.562213	0.625498
WEG	2015	0.145978	1.21372	10.1371	4.67907	0.369964	0.496461	0.673524	0.554927	0.658757
WEG	2016	0.105201	0.450800	10.2092	5.0352	0.457584	0.621263	0.486682	1.0796	0.687872
WEG	2017	0.12009	0.727955	10.3212	5.50574	0.481772	0.642937	0.499087	0.685601	0.669627
WEG	2018	0.135577	1.27054	10.4376	6.1582	0.539779	0.721006	0.479329	0.377264	0.65991
WEG	2019	0.184822	1.05848	10.4738	5.93356	0.540674	0.683614	0.421292	0.398017	0.77092
ENA	2014	0.09926	0.955794	9.15147	3.88923	0.357526	0.545206	0.753116	0.787947	0.751864
ENA	2015	0.119445	0.95188	9.34428	3.96869	0.513074	0.724246	0.753116	0.791187	0.675863
ENA	2016	0.172328	0.956394	9.51368	4.09431	0.496551	0.648243	0.766647	0.801601	0.328757
ENA	2017	0.125303	0.910109	9.68804	4.44494	0.502594	0.636158	0.741216	0.814425	0.718708
ENA	2018	0.133858	0.918236	9.81173	4.46163	0.511225	0.651004	0.744444	0.810732	0.711786
ENA	2019	0.131335	0.928661	9.96386	4.99392	0.553553	0.684512	0.760731	0.81917	0.764462

Sample bank data–Continued---

			1	2	3	4	5	6	7	8
ID	year	ROE	CUR	BSIZE	DEQ	LATA	LAD	CUATA	CLTA	TCTI
ABY	2014	0.180067	0.285347	10.0522	6.37518	0.448815	0.55637	0.245954	0.861948	0.558149
ABY	2015	0.16108	0.284321	10.1357	6.54889	0.432062	0.531133	0.245954	0.865059	0.690205
ABY	2016	0.208568	0.285846	10.2397	5.70515	0.463163	0.58807	0.242545	0.848516	0.713718
ABY	2017	0.152932	0.269804	10.413	6.74934	0.53848	0.669985	0.23441	0.868818	0.715176
ABY	2018	0.132568	0.222735	10.5049	6.53365	0.55595	0.689331	0.192593	0.864673	0.766122
ABY	2019	0.15696	0.342562	10.5943	6.93765	0.596045	0.72858	0.298497	0.871365	0.761227
AWA	2014	0.238075	0.590135	10.3017	7.51245	0.447736	0.596261	0.408945	0.692969	0.568729
AWA	2015	0.202616	0.620000	10.3778	6.00692	0.513832	0.662241	0.408945	0.800066	0.625713
AWA	2016	0.217994	0.677821	10.4858	5.65157	0.503588	0.671917	0.502673	0.741602	0.650854
AWA	2017	0.175439	0.625337	10.6024	6.37952	0.559471	0.729444	0.472592	0.75574	0.65023
AWA	2018	0.229755	0.71384	10.7425	7.5084	0.56179	0.71457	0.585629	0.820393	0.636792
AWA	2019	0.252396	0.595394	10.8729	6.74312	0.627787	0.785947	0.205544	0.345224	0.584857
ABA	2014	0.127386	1.62069	9.50471	6.07035	0.461348	0.574861	0.303344	0.18717	0.742485
ABA	2015	0.175217	1.64915	9.66107	5.39993	0.504418	0.624498	0.303344	0.18394	0.662795
ABA	2016	0.155845	1.120800	9.79438	5.62557	0.500501	0.64295	0.331634	0.295892	0.696679
ABA	2017	0.145425	1.04213	9.93914	5.65031	0.490083	0.623503	0.287663	0.276035	0.706562
ABA	2018	0.175763	0.983192	10.0908	5.83405	0.478574	0.6166	0.236085	0.240121	0.682044
ABA	2019	0.204109	2.270000	10.1792	5.14714	0.502915	0.655021	0.355579	0.204053	0.62819
ADD	2014	0.106167	1.14077	9.10131	3.00283	0.400281	0.637853	0.623154	0.546257	0.587601
ADD	2015	0.098851	1.15571	9.23426	2.8533	0.444529	0.687054	0.623154	0.539198	0.62438
ADD	2016	0.101631	0.985933	9.39486	2.94085	0.421341	0.661585	1.02407	1.03869	0.623621
ADD	2017	0.126847	0.775408	9.53677	3.56728	0.454419	0.680469	0.50408	0.650084	0.686926
ADD	2018	0.125861	0.985256	9.62418	3.69207	0.484313	0.686277	0.355111	0.360425	0.69894
ADD	2019	0.143266	1.53555	9.74153	3.96104	0.48025	0.671092	0.72158	0.469918	0.694835
DAB	2014	0.274283	0.400266	10.3417	7.45472	0.429357	0.53331	0.162164	0.405141	0.55357
DAB	2015	0.249371	0.400172	10.3938	7.46949	0.457646	0.571971	0.162164	0.405236	0.616817
DAB	2016	0.160333	0.178669	10.4759	5.59712	0.420731	0.551944	0.075172	0.420731	0.652208
DAB	2017	0.155784	0.143355	10.5563	5.88288	0.496955	0.642428	0.071241	0.496955	0.713108
DAB	2018	0.158346	0.137347	10.6573	6.74304	0.507591	0.640722	0.069716	0.507591	0.741928
DAB	2019	0.148504	1.46182	10.7499	7.21093	0.575722	0.723727	0.341379	0.23353	0.770708

Table Data for the analysis

Annex 2.Regression Test Results

Test results of CLRM Assumptions

1.**Heterockedasticity test result from stata version 13**

```
. imtest,white

White's test for Ho: homoskedasticity
         against Ha: unrestricted heteroskedasticity

         chi2(44)      =     51.46
         Prob > chi2   =    0.2049

Cameron & Trivedi's decomposition of IM-test
```

Source	chi2	df	p
Heteroskedasticity	51.46	44	0.2049
Skewness	17.74	8	0.0233
Kurtosis	0.68	1	0.4099
Total	69.88	53	0.0600

Source: Financial statement of sampled commercial banks and own computation through STATA

2.Correlation analysis result from stata version 13

```
. vif
```

Variable	VIF	1/VIF
LATA	6.72	0.148779
LAD	5.63	0.177742
CLTA	5.29	0.188928
CUATA	5.10	0.196101
CUR	4.72	0.211907
BSIZE	2.92	0.342968
DEQ	2.74	0.365116
TCTI	1.21	0.824629
Mean VIF	4.29	

Source: Financial statement of sampled commercial banks and own computation through STATA

3. Correlation Analysis Result from stata version 13

```
. corr CUR BSIZE DEQ LATA LAD CUATA CLTA TCTI
(obs=54)
```

	CUR	BSIZE	DEQ	LATA	LAD	CUATA	CLTA
CUR	1.0000						
BSIZE	-0.4328	1.0000					
DEQ	-0.3055	0.6068	1.0000				
LATA	-0.0236	0.4950	0.3256	1.0000			
LAD	0.1460	0.1267	-0.1193	0.7942	1.0000		
CUATA	0.3759	-0.4889	-0.1299	-0.0737	0.1446	1.0000	
CLTA	-0.5183	0.0243	0.2390	0.0308	-0.0084	0.4774	1.0000
TCTI	-0.0034	0.1745	0.3824	0.2084	0.0276	0.0178	0.0750

	TCTI
TCTI	1.0000

Source: Financial statement of sampled commercial banks and own computation through STATA

4. Test of Normality Result from stata version 13

```
. sktest uhat
```

Skewness/Kurtosis tests for Normality

				joint	
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
uhat	54	0.5013	0.1519	2.64	0.2676

Source: Financial statement of sampled commercial banks and own computation through STATA

5. Tests for Skeness and Kurtosis result from stata version 13

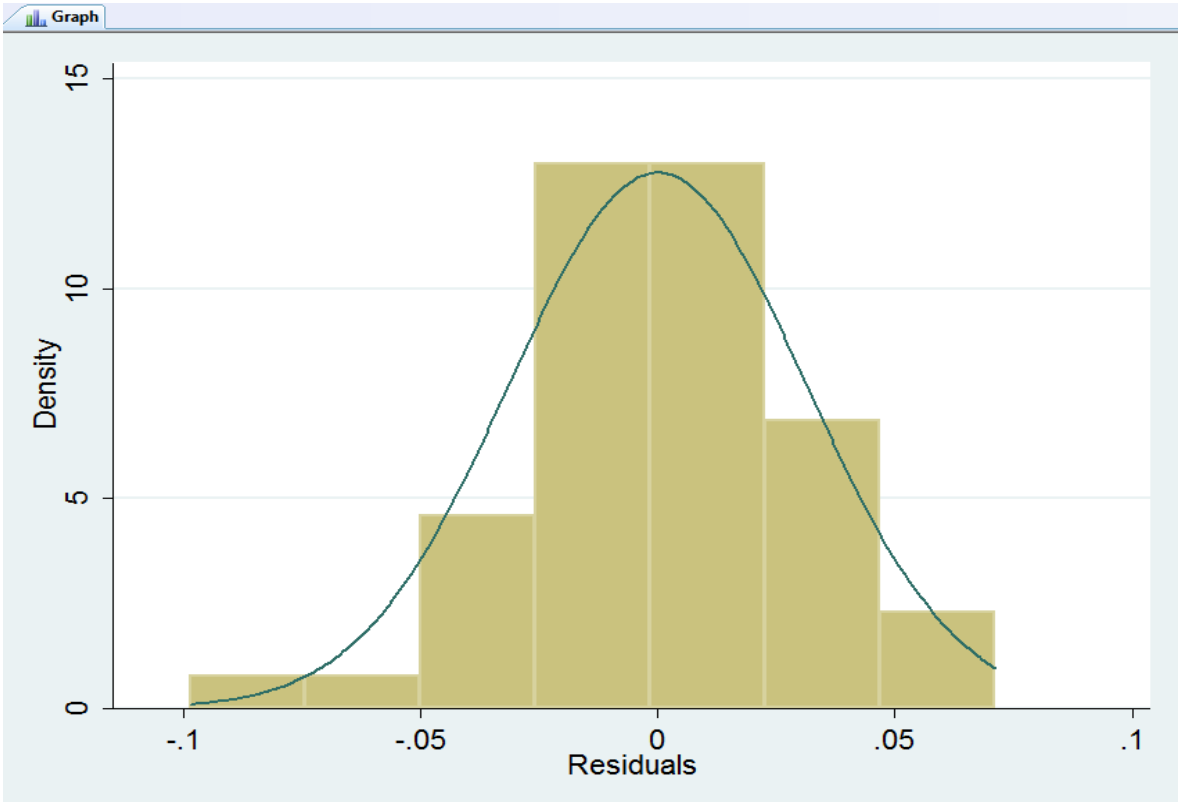
```
. sum uhat,detail

                        Residuals
-------------------------------------------------------------
      Percentiles      Smallest
 1%    -.0986579      -.0986579
 5%     -.046101      -.0517932
10%    -.0380196       -.046101       Obs                  54
25%    -.0184032      -.0437495       Sum of Wgt.          54

50%     .0012052                      Mean           5.61e-11
                       Largest       Std. Dev.      .0312545
75%     .0191212       .0449102
90%     .0418117       .0524833       Variance       .0009768
95%     .0524833       .0623269       Skewness      -.2037375
99%     .0712723       .0712723       Kurtosis       3.764789
```

Source: Financial statement of sampled commercial banks and own computation through STATA

6. Normality Tests from result from stata version 13



Source: Financial statement of sampled commercial banks and own computation through STATA

Table 2.7 Histogram result from stata version 13

```
. xtreg ROE CUR BSIZE DEQ LATA LAD CUATA CLTA TCTI,fe

Fixed-effects (within) regression               Number of obs      =        54
Group variable: ID                              Number of groups   =         9

R-sq:  within  = 0.5939                         Obs per group: min =         6
       between = 0.0908                                        avg =       6.0
       overall = 0.3266                                        max =         6

                                                F(8,37)            =      6.76
corr(u_i, Xb)  = -0.2960                        Prob > F           =    0.0000

------------------------------------------------------------------------------
         ROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         CUR |   .0008847   .0280532     0.03   0.975    -.0559566     .057726
       BSIZE |   .0459102   .0289061     1.59   0.121    -.0126592    .1044796
         DEQ |  -.0059228   .0061218    -0.97   0.340    -.0183267     .006481
        LATA |   .0912904   .2749634     0.33   0.742    -.4658384    .6484191
         LAD |  -.1199892   .1921919    -0.62   0.536     -.509407    .2694285
       CUATA |  -.0100589   .0716081    -0.14   0.889    -.1551507    .1350328
        CLTA |  -.0580406   .0572174    -1.01   0.317     -.173974    .0578928
        TCTI |   -.327334   .0539347    -6.07   0.000    -.4366161   -.2180519
       _cons |   .0364681   .2518902     0.14   0.886    -.4739099     .546846
-------------+----------------------------------------------------------------
     sigma_u |  .03795412
     sigma_e |  .03028905
         rho |  .61092056   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(8, 37) =     2.43                 Prob > F = 0.0321
```

Source: Financial statement of sampled commercial banks and own computation through STATA

Table 2.8 Regression Result -Fixed Effect Model from stata version 13

```
. xtreg ROE CUR BSIZE DEQ LATA LAD CUATA CLTA TCTI,fe

Fixed-effects (within) regression               Number of obs      =        54
Group variable: ID                              Number of groups   =         9

R-sq:  within  = 0.5939                         Obs per group: min =         6
       between = 0.0908                                        avg =       6.0
       overall = 0.3266                                        max =         6

                                                F(8,37)            =      6.76
corr(u_i, Xb)  = -0.2960                        Prob > F           =    0.0000

------------------------------------------------------------------------------
         ROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         CUR |   .0008847   .0280532     0.03   0.975    -.0559566     .057726
       BSIZE |   .0459102   .0289061     1.59   0.121    -.0126592    .1044796
         DEQ |  -.0059228   .0061218    -0.97   0.340    -.0183267     .006481
        LATA |   .0912904   .2749634     0.33   0.742    -.4658384    .6484191
         LAD |  -.1199892   .1921919    -0.62   0.536     -.509407    .2694285
       CUATA |  -.0100589   .0716081    -0.14   0.889    -.1551507    .1350328
        CLTA |  -.0580406   .0572174    -1.01   0.317     -.173974    .0578928
        TCTI |   -.327334   .0539347    -6.07   0.000    -.4366161   -.2180519
       _cons |   .0364681   .2518902     0.14   0.886    -.4739099     .546846
-------------+----------------------------------------------------------------
     sigma_u |   .03795412
     sigma_e |   .03028905
         rho |   .61092056   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(8, 37) =     2.43                 Prob > F = 0.0321
```

Source: Financial statement of sampled commercial banks and own computation through STATA

8.Regression Result -Random Effect Model from stata version 13

```
. xtreg ROE CUR BSIZE DEQ LATA LAD CUATA CLTA TCTI,re

Random-effects GLS regression                   Number of obs      =        54
Group variable: ID                              Number of groups   =         9

R-sq:  within  = 0.5003                         Obs per group: min =         6
       between = 0.8758                                        avg =       6.0
       overall = 0.6407                                        max =         6

                                                Wald chi2(8)       =     80.25
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000
```

ROE	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
CUR	-.0021211	.0239392	-0.09	0.929	-.049041	.0447989
BSIZE	.0169623	.0181889	0.93	0.351	-.0186872	.0526118
DEQ	.0088273	.0038706	2.28	0.023	.001241	.0164136
LATA	.3190416	.2122241	1.50	0.133	-.09691	.7349932
LAD	-.1948294	.1543456	-1.26	0.207	-.4973412	.1076823
CUATA	-.0228562	.047794	-0.48	0.632	-.1165308	.0708184
CLTA	-.0116269	.0439057	-0.26	0.791	-.0976806	.0744268
TCTI	-.4035843	.0547109	-7.38	0.000	-.5108157	-.2963529
_cons	.2028995	.1733877	1.17	0.242	-.1369342	.5427332
sigma_u	0					
sigma_e	.03028905					
rho	0	(fraction of variance due to u_i)				

Source: Financial statement of sampled commercial banks and own computation through STATA

Hausman Test for Fixed Effect and Random Effect Model choice

```
. hausman fe re

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |       fe           re       Difference          S.E.
-------------+------------------------------------------------------------
         CUR |    .0008847   -.0021211        .0030058        .0146253
       BSIZE |    .0459102    .0169623        .0289479        .0224662
         DEQ |   -.0059228    .0088273       -.0147501        .0047428
        LATA |    .0912904    .3190416       -.2277512        .1748308
         LAD |   -.1199892   -.1948294        .0748402        .1145215
       CUATA |   -.0100589   -.0228562        .0127972         .053324
        CLTA |   -.0580406   -.0116269       -.0464137        .0366894
        TCTI |    -.327334   -.4035843        .0762503               .
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         9.76
                Prob>chi2 =       0.2820
                (V_b-V_B is not positive definite)
```

Source: Financial statement of sampled commercial banks and own computation through STATA