THE IMPACTS LIQUIDITY ON FINANCIAL PROFITABILITY OF COMMERCIAL BANK OF ETHIOPIA

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A SINNER ESSAY RESEARCH SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE WOLKITE UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF BACHELOR OF ARTS IN ACCOUNTING AND FINANCE.

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ABSTRACT

Liquidity can be defined as the ability of a financial institution to meet all legitimate demands for funds and also the ability of bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses. the main objectives of this study intends to investigate the impact of liquidity on financial profitability of commercial bank as in General and to examine the impacts of liquidity ratio , capital strcacture , forign exchange rate , loan to deposit ratio , and bank size as spcifice obejective on the profitability of commercial banks as well as the problems of the study was attempt to investigate the trade of and what kinds of relationshipe exist between the above five variable in the context of CB.Thise research methodology was designed with in the country location because the commercial banks does not exist as specific location and to determine the relationship between profitability and its impact,as alogical reasoning it uses deductive reasoning rather than inductive because it depandes up on law and prenciples, also it shows cuase and effect relationshipe between profitability and its impact. The target population of the study comprise all Ethiopian commercial bank among this taken only 12 Banks as sample size based on the fitness their financial statements by using Non probability sampling and the study use explanatory research design with a quantitative research method by combining documentary analysis (structured review of documents). The panal data taken from the audited financial statements of the Bank, particularly balance sheet and income statements during 2012 to 2018. There were analyzed by the methods of correlation and regressions model.The major finding show Results of the regression model indicate that Liquidity ratio; capital stracture, bank size has positive significant impact on financial profitability. However, loan to deposit ratio shows negative impact & insignificant and finally forign exchange rate has an inverse relation with profitability with in significant impacts. finally As a resualt many researchers say that liquiditie have inverse relation with profitablitie .But thise studies (the research) showed and conclude that, liquidity have positive and significant impact on financial profitability of commercial banks.

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Acronym

CBE= Commercial Banks of Ethiopia

NIM=Net interest margin

NBE= National Banks of Ethiopia

ROA=Return on Asset

LQR=Liquidity ratio

LTDR=Loan to deposit ratio

ROE=Return on equity

CLRM = Classical lineary regration model

FER = Forign exchange rate

BZ = Bank size

CHAPTER ONE

1 INTRODUCTION

1.1.Background of the study

Banks are financial institutions that played like an intermediary role in an economy through channeling financial resources from surplus economic units to deficit ones. In turn, banks facilitated the saving and capital formation in an economy. The financial intermediation role of the commercial banks hence becomes the basis of the two major functions of commercial banks, namely, deposit mobilization and credit extension. The banking institution have contributed significantly to the effectiveness of the entire financial system as they offered an efficient institutional mechanism through which resources could been mobilized and direct from less essential uses to more productive investments.

Adequate financial intermediation requires the purposeful attention of bank management to profitability and liquidity, which were two conflicted goals of the commercial banks. These goals were parallel in the sense that any attempt to achieved higher profitability would certainly eroded its liquidity and solvency positions and vice versa. Practically, profitability and liquidity were effective indicators of the corporate health and financial performance of the commercial bank of Ethiopia. (Eljelly, 2004). These financial performance indicators were very important to the shareholders and depositors. As the shareholders were interested in the profitability level, the depositors were concerned with liquidity position which determined the bank's ability to responded to withdrawal demands. To maintain relative macro-economic stability, reliance was placed on liquidity management to even out the swings in liquidity growth in the banking system.Profit was a necessary and a goal for commercial banks of Ethiopia. Finance managers mostly directed their efforts to this goal to enhanced shareholders' worth. To did this, banks needed to remain profitable (Ignore and Kusa, 2013). Therefore, profits were not only a result but also a necessity for successful banking in a period of growing competition in financial markets. Profit is also an essential prerequisite of a competitive banking institution and the cheapest source of funds. Bank profits provide an important source of equity especially if re-invested into the business. This should lead to safe banks, and as such high profits could promoted financial stability (Olwenyand Shipho, 2011). Bank liquidity referee to the ability of the bank to ensured

the availability of funds to meet financial commitments or maturing obligations at a reasonable price at all times. Bank liquidity means a bank having money where they need it particularly to satisfy the withdrawal needs of the customers (Wasiuzzaman and Tarmizi, 2010). Liquidity is a financial term that means the amount of capital that was available for investment. Today, most of this capital was a credit fund. That was because the large financial institutions that did most investments prefered used borrow money (Felix and Claudine, 2008). Profitability and liquidity were effective indicators of the corporate health and performance the commercial banks, not only but all profit-oriented ventures (Eljelly, 2004). These performance indicators were very important to the shareholders and depositors who were major publics of a bank.

Through the financial intermediation role, the commercial banks of Ethiopia reactivate the idle funds borrow from the lenders by investing such funds in different classes of portfolios. The liquidity risk of banks arised from a funding of long-term assets by short-term liabilities, there by maked the liabilities subject to rollover or refinancing risk. Liquidity risk was usually of an individual nature, but in certain situations maight compromised the liquidity of the financial system. Liquidity risk management in banks is defined as the risk of being unable either to meet their obligations to depositors or to fund increases in assets as they fall due without incurring unacceptable costs or losses. Effective liquidity risk management helps ensure a bank's ability to meet its obligations as they fall due and reduces the probability of an adverse situation developing (Ahmad, 2009).

A bank is responsible for the sound management of liquidity risk. A bank should establish a robust liquidity risk management framework that ensures it maintained sufficient liquidity, included a cushion of unencumbered, high-quality liquid assets, to withstand a range of stress events, including those involved the loss or impairment of both unsecured and secured funding sources. Supervisors should assess the adequacy of both a bank's liquidity risk management framework and its liquidity position and should take prompt action if a bank was deficient in either area to protect depositors and to limit potential damage to the financial system (Kumar and Yadav, 2013). Banks were responsible for managing liquidity creation and liquidity risk. Liquidity creation helps depositors and companies stay liquid, for companies especially when other forms of financing become difficult. Managing liquidity risk was to ensured the banks own liquidity so that the bank could continue to serve its function (Vossenand& Ness, 2010). During the early “liquidity phase” of the financial crisis that began in 2007, many banks – despite

adequate capital levels – still experience difficulties because they did not prudently manage their liquidity. The crisis drives home the importance of liquidity to the proper functioning of financial markets and the banking sector. Before the crisis, asset markets were buoyant and funding was readily available at low cost.

The rapid reversal in market conditions illustrated how quickly liquidity could evaporate, and that illiquidity could last for an extended period. The banking system came under severe stress, which necessitates central bank action to support both the functioning of money markets and, in some cases, individual institutions. In the aftermath of the crisis, there was a general sense that banks had not fully appreciated the importance of liquidity risk management and the implications of such risk for the bank itself, as well as the wider financial system. As such, policymakers have suggested that banks should hold more liquid assets than in the past, to help self-insure against potential liquidity or funding difficulties. This has led to an international desire for common measures and standards for liquidity risk (Basel Committee on Banking Supervision, 2013).

The financial profitability of commercial banks of Ethiopia could been affected by internal and external factors (Kosmidou, 2008). These factors could been classified as into bank-specific (internal) and macroeconomic variables (external). The internal factors were individual bank characteristics that affect the bank's profitability. These factors were influenced by the internal decisions of management and board. The external factors were sector-wide or countrywide factors which were beyond the control of the company and affect the profitability of banks. But this study was concerned with the relationship between customer satisfaction and bank financial profitability To measure the profitability of commercial banks there were a variety of ratios use of which Return on Asset, Return on Equity and Net Interest Margin were the major ones (Murthy and Sree, 2003).

Liquidity risk was said to be the assassin of banks. This risk ccould adversely affect both the bank's earnings and the capital. Therefore, it becomes the top priority of a bank's management to ensured the availability of sufficient funds to meet future demands of providers and borrowers, at reasonable costs.It was evidenced that liquidity and liquidity risk was very emerged and important topic. Therefore banks and regulators were keen to keep control on the liquidity position of banks. However, this fragility is also a source of efficiency. Diamond and Rajan (2001) argue that the financial intermediation structure was efficient in that it disciplines banks when carrying out their lending function. The threat of a run was an incentive for the bank to

choose projects with high returns. More generally, this also suggests that an "even more liquid" bank might not always been desirable for the efficiency of the financial system. Therefore, effective liquidity risk management helps ensured a bank's ability to meet cash flow obligations, which were uncertain as they were affected by external events and other agents' behavior and to keep their optimal profitability.In the CBE context, Karki (2004) found that liquidity ratio was relatively fluctuating over the period, return on the equity was found satisfactory and there was the a positive relationship between deposits and loan advances. The recommendations made that were the existing condition of the liquidity of the banking and financial institutions need to been reduced through an appropriate investment policy. Studies on Ethiopian commercial banks 'financial profitability were important as guidance towards enhanced the economy since banks did contributed to economic growth and stability. Stability in the banking sector helps to maintain stability in the economy (Baral, 2005).

1.2.Statement of the Problem

In the course of the financial intermediation role, commercial banks of Ethiopia reactivate the idle funds borrow from the lenders (depositors) by investing such funds in different classes of portfolios. Such business activity of a bank was not without problems since the deposits from these fund savers which have been invested by the banks for profit maximization, could been recall or demand when the latter was not in a position to meet their financial obligations. Considered the public loss of confidence as a result of bank distress which have affect the financial sector in the last decade; and the intensity of competition in the bank sector due to the emergence of a large number of new banks, every commercial bank should ensured that it operates for-profit and at the same time meets the financial demands of its depositors by maintaining adequate liquidity. According to Molyneux and Thornton (2004), and Guru, Staunton, and Balashanmugam (2008), there was a negative and significant relationship between the level of liquidity and financial profitability. Tseganesh (2012) madea study to identify determinants of commercial banks' liquidity in Ethiopia and then to spot the impact of banks' liquidity upon financial performance through the significant variables explaining liquidity. Accordingly, the researcher finds out that there exist a non-linear relationship between liquidity and bank on financial performance.

The theories and research conduct in the same area have varied conclusions towards the impact of liquidity on the financial profitability of commercial banks of Ethiopia. For some studies there

exists a negative relationship between liquidity and financial profitability (Molyneux et.al. 2002 and Guru Et.al., 2006) while for some others (Adebayo et.al. 2011) there exists a positive relationship between liquidity and financial profitability. There were also other studies that find out there was a non-linear relationship between the level of liquidity and banks' financial profitability (Tseganesh, 2012 and Lily, 2014). Therefore, this study would attempt to investigate this trade-off and what kind of relationship exists between the aforementioned five variables in the context of CB.

1.3. Hypothesis Test

HP1 : Foreign exchange rate has negative and significant effect on bank profitability of the commercial bank of Ethiopia.

HP2 **:** capital structure has positive significance effect on profitability of the commercial bank of Ethiopia

HP4; liquidity ratio was a positive significant impact on the financial of the commercial bank of Ethiopia

HP3 : Bank size has positive and significant effect on bank profitability profitability of the commercial bank of Ethiopia.

HP5.; loan to deposit ratio was a negative insignificant impact on the financial profitability of commercial banks of Ethiopia.

1.4 Obejective of the study

1.4.1.GeneralObjective

This study primarily examines on the impact of liquidity on financial profitability of commercial bank of Ethiopia.

1.4.2 Specific Objective

- To examine the impact of liquidity ratio on financial profitability of commercial bank of Ethiopia
- To determine the impacts capital stracture on financial profitability of commercial bank of Ethiopia
- To examine the effect of forign exchange rate on financial profitability of commercial bank of Ethiopia
- To determine the impacts of loan to deposit ratio on financial profitability of commercial bank of Ethiopia
- To determine the impacts bank size on financial profitability of commercial bank of Ethiopia

1.5.Significance of the Study

The research would identify the technical and operational challenges of Commercial bank of Ethiopia to remain liquid and at the same time profitable. This research would also add to the body of literature about determined the impact of liquidity on financial profitability of commercial bank of Ethiopia. The outcome of this study would further assist other researchers in paved the way for additional studies in the area of the topic under study.

1.6.Scope of the Study

The research was limits to investigated the impact of liquidity on financial profitability of Ethiopian commercial Bank based on secondary data for period covered from 2012 to 2018.

1.7.Organization of the research

The study is organized in to five chapters. The first chapter provides background of the study, statement of the problems, objectives of the study, hypothesis test, and significance of the study. In the second chapter, review of literature and empirical studies were covered. The research design and methodology is present in the third chapter ,and the next, chapter four was focus on data presentation and analysis the last chapter five studys on conculesion and recommendation of the study.

CHAPTER TWO

2.Related Literature Review

2.1 Introduction

Liquidity can be defined as the ability of a financial institution to meet all legitimate demands for funds (Yeager and Seitz 1989). It is also defined as the ability of bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses (Bank for International Settlement 2008). Moore (2009) explained that "a bank needs to hold liquid assets to meet the cash requirements of its customers if the institution does not have the resources to satisfy its customers' demand, then it either has to borrow on the inter-bank market or the central bank". It follows therefore that a bank unable to meet its customers' demands leaves itself exposed to a run and more importantly, a systemic lack of confidence in the banking system. An asset is liquid if it can be sold quickly without significant losses. What determines the liquidity of an asset is still a disputed issue among theorists (Kyle 1985).

conventional wisdom found in the bank management literature states that an asset is liquid if it is widely known to have low risk (such as government debt) and if it has a short maturity (a short maturity implies that the asset's price is less sensitive to interest rate movements, making large capital losses unlikely) (Garber and Weisbrod 1992 and Hempel et al. 1994). The typical bank assets which are liquid according to that definition include cash, reserves representing an excess of reserves required by law (i.e., funds held in the account at the central bank), securities (e.g., government debt, commercial paper), and interbank loans with very short maturity (one to three days). There is a large volume of theoretical literature dealing with bank liquidity creation (Bryant 1980; Diamond and Dybvig 1983; Holmstrom and Tirole 1998 and Kashyap et al. 2002).

Most researches focuses on measuring the amount of liquidity created in the banking sector (Deep and Schaefer 2004 and Berger and Bouwman 2007); yet few studies shed light on the determinants of bank liquidity creation. Therefore, this chapter focuses on the review of relevant

theoretical and empirical literatures on bank liquidity. This chapter is organized with in four broad sections. Section 2.1 Introduction about the theoretical aspects of banks liquidity, and the impact of liquidity on financial profitablity. Section 2.2 extensively explains theortical review studies on the area of bank liquidity and its impact.Then, section 2.3 Emperical review and 2.3.1

related empirical studies in Ethiopia. Finally, section 2.4 give summaries and knowledege gap to the chapter .

2.2 Theoretical Review

2.2.1.Theories of bank liquidity

2.2.2. Bank Liquidity creation and financial fragilit theory

According to the theory of financial intermediation, an important role of banks in the economy is to provide liquidity by funding long term, illiquid assets with short term, liquid liabilities. Through this function of liquidity providers, banks create liquidity as they hold illiquid assets and provide cash and demand deposits to the rest of the economy. Diamond and Dybvig (1983) emphasize the "preference for liquidity" under uncertainty of economic agents to justify the existence of banks: banks exist because they provide better liquidity insurance than financial markets. However, as banks are liquidity insurers, they face transformation risk and are exposed to the risk of run on deposits. More generally, the higher is liquidity creation to the external public, the higher is the risk for banks to face losses from having to dispose of illiquid assets to meet the liquidity demands of customers. A natural justification for the existence of deposit-taking institutions, thereby giving also an explanation for the economically important role of banks in providing liquidity, was initially modeled by (Bryant 1980 and Diamond and Dybvig 1983).

Liquidity as an entity's capacity to finance increases in its volume of assets and to comply with its payment obligations on maturity, without incurring unacceptable losses.In this regard, liquidity risk can be expressed as the financial probability of incurring losses through insufficient liquid resources to comply with the agreed payment obligations within a certain time horizon,

and having consider the possibility of the entity managing to liquidate its assets in reasonable time and price conditions. (Basel Committee on Banking Supervision 2008)

2.2.3.Theories of Liquidity and Liquidity Management

The theories and management of liquidity are outlined and explained in this section.

Anticipated Income Theory

This theory holds that a bank's liquidity can be managed through the proper phasing and structuring of the loan commitments made by a bank to the customers. Here the liquidity can be planned if the scheduled loan payments by a customer are based on the future of the borrower. According to Nzotta (1997) the theory emphasizes the earning potential and the credit worthiness of a borrower as the ultimate guarantee for ensuring adequate liquidity. Nwankwo (1991) posits that the theory points to the movement towards self-liquidating commitments by banks. This theory has encouraged many commercial banks to adopt a ladder effects in investment portfolio.

Shift ability Theory

This theory posits that a bank's liquidity is maintained if it holds assets that could be shifted or sold to other lenders or investors for cash. This point of view contends that a bank's liquidity could be enhanced if it always has assets to sell and provided the Central Bank and the Discount Market stands ready to purchase the asset offered for discount. Thus this theory recognizes and contends that suitability, marketability or transferability of a bank's assets is a basis for ensuring liquidity. This theory further contends that highly marketable security held by a bank is an excellent source of liquidity. Liquidity management theory according to Dodds (1982) consists of the activities involved in obtaining funds from depositors and other creditors (from the market especially) and determining the appropriate mix of funds for a particularly bank. This point of view contends that liability management must seek to answer the following questions:

- How do we obtain funds from depositors?

- How do we obtain funds from other creditors?
- What is the appropriate mix of the funds for any bank?

Management examines the activities involved in supplementing the liquidity needs of the bank through the use of borrowed funds. The liquidity management theory focuses on the liability side of bank balance sheet. This theory contends that supplementary liquidity could be derived from the liabilities of a bank. According to Nwankwo (1991) the theory argues

that since banks can buy all the funds they need, there is no need to store liquidity on the asset side (liquidity asset) of the balance sheet.

Commercial Loan Theory

A critical underlying assumption of the theory held that short-term commercial loans were desirable because they would be repaid with income resulting from the commercial transaction financed by the loan.This theory has been subjected to various criticisms by Dodds (1982) and Nwankwo (1992). From the various points of view, the major limitation is that the theory is inconsistent with the demands of economic development especially for developing countries since it excludes long term loans which are the engine of growth. The theory also emphasizes the maturity structure of bank assets (loan and investments) and not necessarily the marketability or the shift ability of the assets. Moreover, the theory fails to reflect in the normal stability of demand deposits in the liquidity consideration. This obvious view may eventually have impact on the liquidity position of the bank. Also the theory assumes that repayment from the self-liquidating assets of a bank would be sufficient to provide for liquidity. This ignores the fact that seasonal deposit-withdrawals and meeting credit request could affect the liquidity position adversely.

Liquidity Management

According to Adebayo et.al (2010), Liquidity management refers to the planning and control necessary to ensure that the organization maintains enough liquid assets either as an obligation to the customers of the organization so as to meet some obligations

incidental to survival of the business or as a measure to adhere to the monetary policies of the central bank. For a commercial bank to plan for or manage its liquidity position, it first manages its money position by complying with the legal requirement. Actually, management of money position is essential if a bank must avoid excesses or deficiencies of required primary reserves. Where there is a decline in market price of securities or where additional funds needed to correct the bank reserve position are for a very short time, it will be definitely expensive to sell securities than to borrow from another bank. Moreover, it may be more desirable to borrow for bank's liquidity needs than to call back

outstanding loans or to cancel or place embargo on new loans, a situation that will reduce the existing and potential customers of a bank. Commercial bank of Ethiopia are expected to maintain certain levels of reserves. These reserves are statutory requirements stipulated by the central bank specifying the cash reserves equal to certain fraction of the banks' deposits or loans and advances which bank must maintain. The purpose of liquidity management is to ensure that every bank is able to meet fully its contractual commitments. The ability to fund increases in assets and meet obligations as they come due is critical to the ongoing viability of any bank. Therefore, managing liquidity is among the most important activities conducted by banks.

Sound liquidity management can reduce the probability of serious problems. Indeed, the importance of liquidity transcends the individual bank, since a liquidity shortfall at a single bank can have system-wide repercussions. For this reason, the analysis of liquidity requires the management of the bank not only to measure the liquidity position of the bank on an ongoing basis, but also to examine how funding requirements are likely to evolve under various scenarios, including adverse conditions (NBE Risk Management Guidelines, 2010).

2.2.4.Liquidity Measurement in Commercial Bank of Ethiopia

Practically, liquidity management in commercial bank of Ethiopia is surrounding both size of the prospective needs for liquidity at any given time and the availability of sources of liquidity sufficient to meet them. The importance of accurate liquidity

measurement cannot be over stressed as it reveals the liquidity positions of the banks through which the operators of the financial market and other creditors adjudged the credit worthiness of the banks.

Liquidity can be measured as a stock or as a flow. From the stock perspective, liquidity management requires an appraisal of holdings of assets that may be turned into cash. The determination of liquidity adequacy within this framework requires a comparison of holding of liquid assets with expected liquidity needs. Stock concept of liquidity management has been criticized as being too narrow in scope.

The flow concept of liquidity measurement views liquidity not only as the ability to convert liquid assets into cash but also the ability of the economic units to borrow and generate cash from operators. This approach recognizes the difficulty involved in determining liquidity standards since future demands are not known. It also recommends accurate forecast of cash needs and expected level of liquid assets and cash receipts over a given period of time for there to be a realistic appraisal of a bank's liquidity position. Between the two concepts, the stock concept is the widely used and involving the application of financial ratios in the measurement of liquidity positions of commercial banks. One of the popular financial ratios used in such measurement is liquidity ratios which measures the ability of the bank to meet its current obligations. The liquidity ratios are composed of current ratio and quick ratio.

Current ratio is a measure of CBE short term solvency and is calculated by dividing current assets by current liabilities incurred. The current assets are composed of cash and those assets which can be converted into cash in a short period which include marketable securities, receivables, inventories, and prepaid expenses. Current liabilities consist of all obligations maturing within a year. They include accounts payable, bills payable, note payable, accrued expenses and tax liability. A current ratio that is greater than one is adjudged satisfactory for most business firms even though it is difficult to authoritatively set one standard for all firms. The problem associated with the measure of liquidity with current ratio is that it is the test of quantity and not quality of the assets and hence, it does not reveal the true position of a firm's liquidity. Current ratio gives a rough idea of

the firm's liquidity. Another aspect of liquidity ratio is quick ratio, which indicates the relationship between liquid assets and current liabilities. Quick ratio is calculated by dividing the quick asset (current asset less inventories) by current liabilities. The quick assets are the assets that can be converted into cash immediately without losing their values. Inventories are subtracted from the current assets because they normally require some time for realizing cash and their value has a tendency to fluctuate. Quick ratio is considered to be a better guide to the short-term solvency of a firm. A quick ratio is considered to represent a satisfactory current financial condition. However, each industry has its own operating characteristics which demands different financial -

standards. Other ratios which have been developed to measure liquidity are liquid assets to total assets; liquid assets to total deposits; loans and advances to deposits. Calculating the ratio of liquid assets to total assets explains the importance of a bank's liquid assets among its total assets. It indicates the proportion of a bank's total assets that can be converted into cash at a short notice. The ratio of liquid assets to total deposits shows what percentage of a bank's deposits is held in liquid form. It relates liquid assets directly to deposit level. The ratio of loan and advances to deposits reflects the quantity or proportion of the customers' deposits that has been given out in form of loans and the percentage that is retained in the liquid forms. The ratio serves as a useful planning and control tool in liquidity management since CBE use it as a guide in lending and investment, and to make a total evaluation of their expansion program. When the ratio rises to a relatively high level, banks are encouraged to lend and invest and vice versa, to take some benefit of profitability.

Cash ratio i.e. ratio of cash to total deposits or assets is another measure of bank liquidity. Its advantage over others is that liquid assets are related directly to deposits rather than to loans and advances that constitute the most illiquid of banks assets. Its drawback is that a substantial part of the cash assets is not really available to meet most liquidity assets. According to Obilor (2013), another measure of bank liquidity is the loan to liabilities ratio. The approach recognizes that liabilities other than deposits ratio represent potential drain on bank funds. According to State Bank of Pakistan category, all the above mentioned ratios and measures are classified in the following manner:

- **Cash Flow Ratios and Limits.** One of the most serious sources of liquidity risk comes from a bank's failure to "roll over" a maturing liability. Cash flow ratios and limits attempt to measure and control the volume of liabilities maturing during a specified period of time.
- **Liability Concentration Ratios and Limits.** Liability concentration ratios and limits help to prevent a bank from relying on too few providers or funding sources. Limits are usually expressed as either a percentage of liquid assets or an absolute amount. Sometimes they are more indirectly expressed as a percentage of deposits, purchased funds, or total liabilities.
- **Other Balance Sheet Ratios.** Total loans/total deposits, total loans/total equity capital, borrowed funds/total assets etc. are examples of common ratios used by financial institutions to monitor current and potential funding levels.

2.2.5.The Concept of financial Profitability on CBE

According to Abu rime (2008) profit means the difference between the revenue generated from the sale of output and the full opportunity cost of factor used in the production of that output. Included within costs are the premium charged for risk taking and the costs of using the owners capital. Corporate profit planning remains one of the most difficult and time consuming aspects of financial management because of the many variables involved in the decision which are often outside the control of the company. It is even more difficult if the company is operating in a highly competitive economic environment. A business unit can only grow focusing on its inner strengths to exploit the opportunities in the market. Consequently, the best definition as cited in Obilor (2013) that was opined by Tsomocos (2003) should be adopted from a survival growth perspective as business unit should think of surviving before making profit. Again, optimizing profit involves two variables; revenue and cost. The issue of profitability is a continuous issue that a company has to consistently make. Essentially profitability is concerned with the level of turnover that must be achieved in order to cover the level of turnover that must be achieved in order to cover costs and make surplus.

2.2.6.Measure of Bank financial profitabili

a) Return on Asset (ROA)

The return on assets ratio, often called the return on total assets, is a profitability ratio that measures the net income produced by total assets during a period by comparing net income to the average total assets. ROA is a basic measure of bank's profitability that corrects for the size of a bank. In other words, the return on assets ratio measures how efficiently a bank can manage its assets to produce profits during a period. Since company assets' sole purpose is to generate revenues and produce profits, this ratio helps management see how well the company can convert its investments in assets into profits

2.3.Empirical Review

A study undertaken by Bordeleau and Graham (2010) on the impact of liquidity on profitability of a sample of large U.S.A and Canadian commercial banks revealed that a nonlinear relationship exists, where by profitability is improved for banks that hold some liquid assets, however, there is a point beyond which holding further liquid assets diminishes a banks' profitability. The researchers have identified liquid asset ratio, real GDP growth and short-term funding reliance as a proxy for the independent variable, liquidity. The dependent variable, profitability was represented by return on assets and return on equity. The researchers took the initiative to use Econometrics as their method of data analysis for the secondary data that has been used as input for the study. A study titled "Liquidity Management and Commercial Banks' Profitability inNigeria"by Adebayo et.al. (2011) found out that there exist a positive relationship between liquidity and financial profitability. According to the researchers finding, financial profitability will be optimized only when liquidity is effectively and efficiently managed i.e. when the commercial bank of Ethiopia is able to meet its financial obligations and at the same time maximizes its profits.

A situation where the CBE maintain more than the required liquidity level, the result will be huge stock or idle stock of fund in the vault at the expense of financial profitability. The

researchers relied on primary data and used questionnaire as their source of data. In the meantime, correlation was used as a method of analysis for the study. Another study undertaken by Obilor (2013) on the same topic in Nigerian commercial banks with a sample of three commercial banks came up with the finding that for banks to resolve the liquidity/profitability trade-off, there is a need for each bank to determine its optimal liquidity position. The researcher has identified 3 variables such as Bank cash asset, Bank balances, and Treasury Bills and Certificate of Deposit as its independent variables and profit as dependent variable. The source of data and method of data analysis employed by this study were secondary data and regression analysis respective

2.3.1 Related Empirical studies in Ethiopia

Some related studies were conducted by different researchers in Ethiopia. Specifically,Dereje (2014), made an exploratory study titled assessment of liquidity risk management practices at wogagen bank.The researcher used questionnaires, interview and annual audited reports and identified that the Bank has been trying to establish independently organized liquidity risk management functions and established Asset Liability Management Committee and put in place polices and limits though they are not effective in dealing with liquidity risks. Despite the Bank has a problem in monitoring and controlling liquidity position in lightof the existing policies and limits, weak management information system and there exist concentration risk of funding sources. Another study conducted by Lily (2014) to assess the impact of liquidity on profitability of Awash International Bank S.C. with the use of quantitative method particularly descriptive design and a time series data retrieved from the balance sheet and income statements during 1995-2013 were analyzed using multiple regression. The results of the multiple regression indicated that liquidity has non-linear relationship on profitability.

According to a study by Tseganesh (2012) that tries to identify determinants of commercial banks liquidity in Ethiopia and then to spot the impact of banks liquidity upon financial performance through the significant variables explaining liquidity. Balanced fixed effect panel regression was used for the data of eight commercial banks in the sample covered the period from 2000 to 2011. Eight factors affecting banks liquidity were selected and analyzed.

Accordingly, the researcher found out that there exist non-linear relationship between liquidity and bank performance.

However, this research paper will endeavor to investigate the impact of liquidity on the financial profitability of commercial bank of Ethiopia. by taking variables that are distinct from the ones identified by the above mentioned studies. The study will include; Liquidity ratio, Loan to Deposit ratio, capital stracture, forign exchange and bank size were independent variables that will show the impact of liquidity on the dependent variable, financial profitability. The study wolud also use a different method of data collection that will include secondary sources of data. In addition to this, statistical data analysis tools such as correlation and regression analysis will be utilize so as to explicitly show the relationship as well as magnitudinal impact of liquidity over financial profitability.

2.4 Summery and knowledge gap of review literature

This summery and knowledge gape shows the variation and its difference from the other researches.there fore the above theoretical as well as empirical review, liquidity is important to all business specially for banking industry since their function is creation of liquidity both on the asset and liability side of their balance sheet. It also revealed that banks liquidity can be affected by different factors such as bank specific and macro Economic factor.

According to the review, most of the empirical studies done on the area about liquidity by using primary data like quasionerie and interview ‘by Adebayo et.al (2011) and the oher researcher show liquidity is non linear relationship with Bank profitablity,where by profitablity improved for bank that hold some liquid asset . e.g (Boredelau and Graham, 2010) and also the other researchers take single Bank to study about bank liquidity ‘by Dereje(2014). thendepand on the above adea this research Address or to show liquidity is positive relationship with bank profitablity by using secondary data and analysis this data by using reggration data model by using tewlve commercial banks.

2.4.1Conceptual Framework

Definition of Terms

- **Bank Size**

Natural logarithm of book value of total assets is used as a proxy to measure bank size and this proxy is able to capture the possible cost advantages related with the size (Sufian & Chong, 2008). Bank size is usually used to explain for potential economies or diseconomies of scale in the banking sector. Furthermore, bank size is associated with diversification which may impact favorably on risk and product portfolio. Economies of scale will reduce the cost of gathering and processing information (Boyd et al., 1993) so that a positive effect of bank size is associated with profitability. Also, the empirical researches conducted by Alper & Anbar (2011) in Turkey and Alexiou & Sofoklis (2009) in Greek found that bank size positively related to bank's profitability. They explained that the positive relationship between bank size and bank's profitability evidenced that larger bank can achieve economies of scales.

Foreign exchange Rate

Foreign Exchange risk arises due to the fluctuations in the exchange rates. Exchange rates can affect the performance of commercial banks because of their funding and get back in the form of dollar or foreign currency so that the income received is also dependent on the fluctuation of exchange rates is going on. Therefore, the risk of exchange rate plays an important part of the company's profit generated. According to Davydenko (2010) the exchange rate depreciation has a positive significant effect on income which could be explained by the ability of banks managers to anticipate exchange rate fluctuations. In line with the Aburime (2008) and Gemechu (2016), found that exchange rate is significant macroeconomic determinants of bank portability.

- Liquidity Ratio

Liquidity is an other factor that determines the level of bank performance. Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. According to Dang (2011) adequate level of liquidity is positively related with bank profitability. The most common financial ratios that reflect the liquidity position of a bank. here liquidity was measured as the ratio of liquid assets to total current liabilities.

- **Capital stracture**

The capital stracture decision was crucial for any business organization including banks. This decision was important because of the need to maximize the returen of the firm ,and also because

of the impact such a decision on the firm ability to deal with its competitive environement . the capital stractures of firm was a mix of different securities (Abor,2005). Berk and DeMarzo(2007) define capital stracture like to this “the relative proportion of debt, equity & other securities that affirm has outstanding constitute its capital stracture”(Berk&Demarzo,2007,p. 428). When a business wants to grow it will need capital to drive its expansion. These funds may come from long-term debt or equity. The mix of debt and equity used to finance the company’s future profitable investment opportunities is referred to as capital structure. A company may choose to look to its owners who have equity to raise the funds, by asking them to forgo their dividend pay-out and instead reinvest their earnings to drive the firm’s operations. By doing so the owners expect that the money put back will enhance the value of the firm and in turn increase the value of their equity.

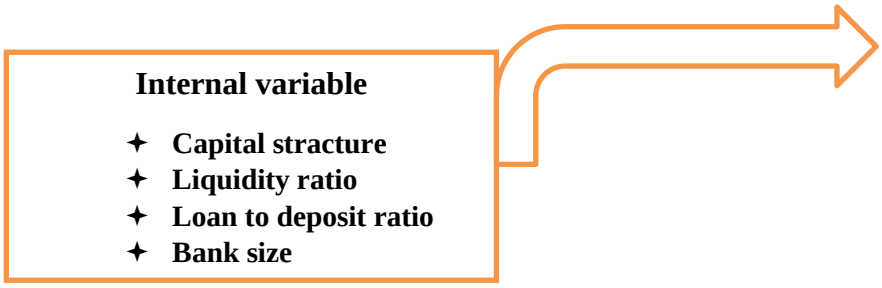
- **Loans to Deposit Ratio**:

the ratio of credit to deposits may give indications of the ability of the bank to mobilize deposits to meet credit demand. This indicates the degree to which a bank can support its core lending business through its deposits.

- **Return on Assets (ROA)**:

shows how profitable a company's assets are in generating revenue. Return on assets is computed as net income divided by average total assets. Summarizing the results for this studies; Liquidity ratio and loan to deposit ratio (Adebayo et.al. 2011 and Oblior, 2013) are take as internal factors affecting banks financial profitablity. On the other hand; inflation rate,and interest rate are among the external factorsthatcanaffectthefinancialprofitablity of a particular bank (Alper and Anbar, 2011; Naceur, 2003; Kaya, 2002 and Nahom, 2015).

Overall, the framework shows the internal and external factors as the independent variables and bank financial profitability, which is expressed as Return on Asset as the dependent variable.



Source;Adapeted from sirak Yifru(2016),Yohannis liku(2017), Tseganesh(2012).

Figure 2.1 conceptual frame work (summery) of independent and dependant variable.

CHAPTER THREE

3. Research methodology

3.1 Introduction

Under this chapter was lto provided brief outline of the broad objectives of the study and the underliened principle of research methodology and the choice of the appropriated research method for the study. The chapter was arranged as follow: methodology of the study, research design, data type and sources, population, data collection, variables specifications and methods of data presentation are list as follows.

3.2 Discription of the study Area

In this research study it covered the geographical area of Ethiopia because the commercial banks of Ethiopia was distributed through out the country or did not got on the specific areas.

3.3 Research Design

Research design was a master plan specified the methods and procedures for collected and analyzed the required data. The choice of research design depends on objectives that the

research's want to achieve (John, 2007).since this study was designed to examined the relationship between financial profitability and its impact, a logical reason either deductive or inductive was required. Deductive reasoning starts from laws or principles and generalizes to particular instance whereas inductive reasoning starts from observed data and develops a generalization from facts to theory. Besides, deductive reasoning was applicable for quantitative research whereas inductive reasoning was for qualitative research. Thus, due to quantitative nature of data, this research uses deductive reasoning to examined the cause and effect of relationships between financial profitability and its impact in this study. As noted by Kothari (2004), explanatory research design examines the cause and effect relationships between dependent and independent variables Therefore, since this study would been examined the cause and effect relationships between financial profitability and its impact; it was an explanatory research design.

3.4 data type ,source and methods of collection

3.4.1 Datataype

There are two types of data such as primery data and secondary data,and have their own function.primery data was a types of data which collected data through quasionerie interview and personal observation ,where as secondary data was forms of data that collected data from written document,book ,journal and other secondary data source then for this research it prefered or used secondary data sources because the data sources (panal data) was easily got from NBE and show the liquidty performance of each bank and also more reliable and time saver than primery data source.

3.4.2 Source of data

In this research all financial statement data source was got from the national banks of Ethiopia. it was more reliable data source because it provide accurate financial statements of the bank at the ends of each year or provide up to date information.methods of data collection means to collect necessary data that guide for research proposal then, in thise research collected Audited financial statement data from national Banks of Ethiopia by used secondary data ,2012 up to 2018

because secondary data was more reliable than others and got mony datas at few time span by used goegle search and got direct forward from NBE.

3.5 Population and sample design

The total populations of the study were all commercial banks in Ethiopia and there were tewelve commercial banks. Then in this this research among eighteen CBE wants to select 12 commercial banks which have fittest financial statement until 2018. Thus were Awash international bank (AIB), Wogagen bank (WB), Nib international bank (NIB), Bank of Abyssinia (BOA),Zemen bank (ZB), Oremia international bank (OIB), Buna international bank (BIB), Berihan Bank(BRIB), Dashen Bank (DB), Cooperative Bank(COB),United Bank (UB), and lion international bank which have more fittest financial statement .. This study employed on non-probability sampled technique to select the required sample of banks from the commercial banks of Ethiopia.quantitative data collection methods were entered on the quantification of relationships between variables. In this study this research used both bank specific and macroeconomics data for commercial banks that operate during the 2012 to 2018 period. The data set also includes macroeconomics variables such forign exchange rate and bank specific variables such as liquidity ratio , loan to deposit ratio, capital stracture, and bank size. The bank specific data were obtaining from the audited financial statement of selected commercial Banks while the macroeconomics variables were obtaining from National Bank of Ethiopia.

3.6. Data Analysis Method

The study would used multiple regression model and to been teste on the Normality, and Multicollinearity, tests to analyzed the relationship between bank liquidity and independent variable and then to seen the impact of bank liquidity on financial profitability by used secondary data which would been collected from the Bank’s audited financial statements. This method was chosen due to the nature of the data which comprise of time-series elements reflected by the period of study 2012 to 2018.

3.6.1. Description and Measurement of Variables

3.6.2 Dependent Variable

Return on Assets (ROA) shows how profitable a company's assets were in generated revenue. Return on assets was computed as net income divided by average total assets.

$$\text{ROA} = \frac{Net\ Income}{Average\ Total\ Assets}$$

This percentage shows what the company could did with what it have (i.e., source of fund derived from equity financing as well as debt financing).

3.6.3. Independent Variables

Liquidity ratio (LIQ1): here liquidity was measured as the ratio of liquid assets to total current liabilities.

i. $\text{LIQ1} = \frac{Liquid\ Assets}{Current\ Liabilities}$

Loans to Deposit Ratio (LIQ2): the ratio of credit to deposits maight gave indications of the ability of the bank to mobilized deposits to meet credit demand. This indicates the degree to which a bank could support its core lending business through its deposits.

$$\text{LIQ2} = \frac{Gross\ Loans\ and\ Advances}{Total\ Deposit}$$

Foreign exchange Rate

Foreign Exchange risk arises due to the fluctuations in the exchange rates. Exchange rates can affect the performance of commercial banks because of their funding and get back in the form of dollar or foreign currency so that the income received is also dependent on the fluctuation of exchange rates is going on. Therefore, the risk of exchange rate plays an important part of the company's profit generated.

The data was given bay NBE

b) Conterol Variables

- **Bank Size**

Natural logarithm of book value of total assets is used as a proxy to measure bank size and this proxy is able to capture the possible cost advantages related with the size (Sufian & Chong, 2008). Bank size is usually used to explain for potential economies or diseconomies of scale in the banking sector. Furthermore, bank size is associated with diversification which may impact favorably on risk and product portfolio. Economies of scale will reduce the cost of gathering and processing information (Boyd et al., 1993) so that a positive effect of bank size is associated with profitability.

Bank size=log of (total asset)

Capital stracture; These funds may come from long-term debt or equity. The mix of debt and equity used to finance the company's future profitable investment opportunities is referred to as capital structure. A company may choose to look to its owners who have equity to raise the funds, by asking them to forgo their dividend pay-out and instead reinvest their earnings to drive the firm's operations. By doing so the owners expect that the money put back will enhance the value of the firm and in turn increase the value of their equity.

Capital stracture,(CASR) can be calculated as follow as;

$$CASR = \frac{\text{Capital and Resereve}}{\text{Total Asset}}$$

3.7. Model Specification

Summarized the results from numerous studies; Liquidity ratio and loan to deposit ratio were taken as internal factors affected banks profitability. On the other hand; inflation rate, and interest rate were among the external factors that could affect the financial profitability of a bank .Hence,the model wouldl been as follows;

$Yit = \beta o + \beta X_{it} + \varepsilon_{it} \beta$ starts,1 ,2, 3, 4

Y_{it} =represents the dependent variables: ROA at time t; βois the constant or slope intercept;

$X1_t$ represents the Bank specific factors: liquidity ratio and loan to deposit ratio at time t;

$X2_t$ represents the Macroeconomic factors: Bank size.

ε_{it} = represents error term

$$\mathbf{ROA_{it}} = \beta o + \mathbf{\beta_1 (LQR)_{it} + \beta_2 (LTDR)_{it} + \beta_3 (CASR)_{it} + \beta_4 (FER)\ it + \beta_{5\ +(BZ)}}$$

B_0 is an Independent variable or intercept

$\beta_1, \beta_2, \beta_3, \beta_4, \&\ \beta_5$ represent estimated coefficient for specific bank at time t, and investementi,

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 INTRODUCTION

In the preceding chapters important literatures relating to the topic were reviewed that gives enough understanding about the topic and used to identify knowledge gap on the area. To meet the broad research objective and to test research hypotheses under it the research design used for this study also discussed in the preceding chapter. In this chapter the data collected were presented and important correlation and regression analysis findings were discussed. The current chapter has five sections. Under the first section (section 4.1.) the descriptive statistics of the dependent and independent variables were presented followed by correlation analysis under section 4.2. Section 4.3 presents the test for the classical liner regression model/CLRM. Then, the results of the regression analysis were presented under

section 4.4. Finally, discussions for the results of the regression analysis were made under section 4.5.

4.1. Descriptive statistics of the data

The descriptive statistics for the dependent and independent variables are presented bellow. The dependent variables was returen on asset and its measured by net income to its average total asset and the remeaning was the independent variables such as: capital sturacture,bank size, foreign exchange rate, liquidity ratio, and loan to deposit ratio.

Table 4.1 bellow Present the descriptive statistics of the dependent and independent variables.

	ROA	BZ	CASR	FER	LQR	LTDR
Mean	0.019675	0.438891	3.718608	0.192751	20.17243	0.619712
Median	0.020029	0.135470	4.045653	0.191100	17.37769	0.620197
Maximum	0.029747	4.094782	4.742475	0.224270	86.61954	0.738008
Minimum	0.009654	0.079487	0.145715	0.165900	2.486888	0.471799

Std. Dev.	0.004110	1.001584	1.126497	0.019593	14.66606	0.065510
Skewness	-0.043418	3.037369	-2.541775	0.188984	1.497713	-0.169518
Kurtosis	2.748340	10.30024	8.358280	1.795651	6.707498	2.204445
Jarque-Bera	0.248057	315.6860	190.9377	5.576605	79.51338	2.617487
Probability	0.883355	0.000000	0.000000	0.061526	0.000000	0.270159
Sum	1.652740	36.86684	312.3631	16.19112	1694.484	52.05583
Sum Sq. Dev.	0.001402	83.26311	105.3267	0.031863	17852.75	0.356204
Observations	84	84	84	84	84	84

Source: *Financial statement of commercial banks and own computation through Eviews 9*

According to table 4.1 all variables comprised 84 observations and the profitability measure used in this study namely; ROA indicates that the Ethiopian commercial banks attained, on average, a positive before tax profit over the last seventh years. For the total sample, the mean of ROA was 10.9% with a minimum of 0.9% and a maximum of 2.9%. That means, the most profitable bank among the tes that the profitability variation between the selected banks was very small. The result implies that sampled banks earned 2.9 cents of profit before tax for a single birr invested in the assets of the firm. On the other hand, the least profitable bank of the sampled banks earned 0.9 cents of profit before tax for each birr invested in the assets of the firm. The standard deviation statistics for ROA was 0.4% which indicathese banks need to optimize the use of their assets to increase the return on their assets. Liquidity ratios means measures banks ability to fund increases in assets and meet obligations as they come due, without incurring unacceptable

loss. The mean value of LQR was 20.1% that was above the NBE's requirement of 15% commencing from 1st October, 2014 (NBE Directives No. SBB/57/2014). The standard deviations of 14.6% showed higher dispersion of liquid assets to current liabilities ratio from its mean for commercial bank. The maximum and minimum values of LQR were86.6% and 2.4%

respectively. On the other hand The mean value of loan to deposit ratio, was 61.9 % that is slightly lower than the international standard for loans to deposit ratio of 75% (CBRC 2012). This indicated that selected type of each commercial bank was lower amount of volatile liabilities (deposits) were tied up with illiquid loans.

There was relatively low dispersion of LTDR towards its mean value during the seven years of operation under consideration by the standard deviation of 6.5%. The maximum and minimum value of LTDR was 73.8% and 47.1% respectively. The natural logarithm values bank size(BZ) were proxy to their total assets of sampled banks. The mean value of this variable was 43.8 birr during the study period undertaken and have a standard deviation of 1.58 birr.

This depict that, there was reasonable dispersion among banks in terms of total assets when their natural logarithms values have taken. The minimum and maximum values were 9.4% and 7.9 % birr respectively, and the other independent variable capital structure (CASR), has mean value of 3.71% with standard deviation of 11.6%. and also the sampled capital structures of the commercial bank maximum and minimum value was 47% and 14.5% respectively.

On the other hand the last independent variable forign exchange rate during the period of this study shows the currency exchange between the local and forign currency, therefore depand up on the above data during the study of 2012 -2018, the forign $1 USD exchanged on average of 19.2 birr, with the local currency. Foreign exchange appeared to be the most volatile with a standard deviation of 1.95

4.2 Correlation Analaysis between dependant and independent variable

Correlation is a way to index the degree to which two or more variables are associated with or related to each other. The most widely used bi-variant correlation statistics is the Pearson product-movement coefficient, commonly called the Pearson correlation which was used in this study. Correlation coefficient between two variables ranges from +1 (i.e. perfect positive relationship) to -1 (i.e. perfect negative relationship). The sample size is the key element to determine whether or not the correlation coefficient is different from zero/statistically significant. As a sample size approaches to 100, the correlation coefficient of about or above 0.20 is significant at 5% level of significance (Meyers et al. 2006). The sample size of the study was 7*12 matrixes of 84 observations which was around 100 hence the study used the above justification for significance of the correlation coefficient.

Table 4.2 bellow shows the correlation coefficient between the dependent variables and independent variables.

	ROA	BZ	LTDR	LQR	FER	CASR
ROA	1					
BZ	-0.1674439309954981	1				
LTDR	0.02738560781865083	-0.3762583132498005	1			
LQR	0.7129691985952616	-0.1764158773284718	0.1327981468853721	1		
FER	0.1281292495325547	0.009948588825968559	0.3487476675087481	0.5054829532313607	1	
CASR	0.3697354868490672	-0.9546144042213277	0.4214296118338555	0.4091991192651501	0.1926022446406942	1

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

The Correlation Analysis indicates that at what extent the explanatory variables are influential on the profitability indicators (ROA). With our bank internal and external variables, such as liquidity ratio, loan to deposit ratio,capital sturacture, and forign exchange rate, are relatively, highly related impact on ROA . This shows that, as LQR, LTDR,CASR, & FER increases, profitability also increases. On the other hand, bank size was inversely relationshipe with its ROA

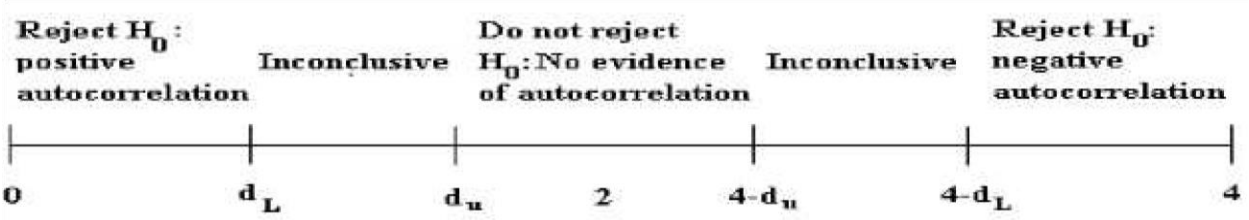
4.3. Classical Linear Regression Model Assumptions and Diagnostic Test

4.3.1. Autocorrelation assumption

This assumption states that the covariance between the errors term overtime or cross-sectionally is zero or simply errors are uncorrelated with one another. But if the errors are not uncorrelated with one another, they are said to be auto correlated or that they are "serially correlated". (Brooks 2008) To test the presence of autocorrelation, the Durbin-Watson test is used. As noted in

Brooks (2008), Durbin Watson is a test for first order autocorrelation (it is a test for a relationship between an error and its immediate previous value). The null hypothesis for the DW test is no autocorrelation between the error term and its lag. According to Brooks (2008), DW has two critical values: an upper critical value (dU) and a lower critical value (dL), and there is also an intermediate region where the null hypothesis of no autocorrelation cannot rejected. The rejection, non-rejection, and inconclusive regions are shown on the number line in figure 4.1 bellow.

Figure 4.3 Rejection and Non-Rejection Regions for DW Test



The study used the dL and dU values for 84 observations.

As per the Durbin-Watson test (DW) table for 84 observations with 5 explanatory variables at 5% level of significance, the dL and dU values are 1.386 and 1.630, respectively. The DW values for model and for 84 observations were 1.779. The relevant critical values for the test are dL= 1.386, dU = 1.630, and 4 - dU = 4 -1.630 = 2.37; 4 - dL = 4 -1.386 = 2.614. Accordingly, Durbin-Watson test value is not clearly between 2.37 and 2.614 which is 1.779 and the DW value is lies in the rejection region, where as the null hypothesis do reject. The Durbin Watson test is an indication to no evidence of autocorrelation.

Figure 4.4 DW test result

0	1.386	1.630	2	2.37	2.614	4

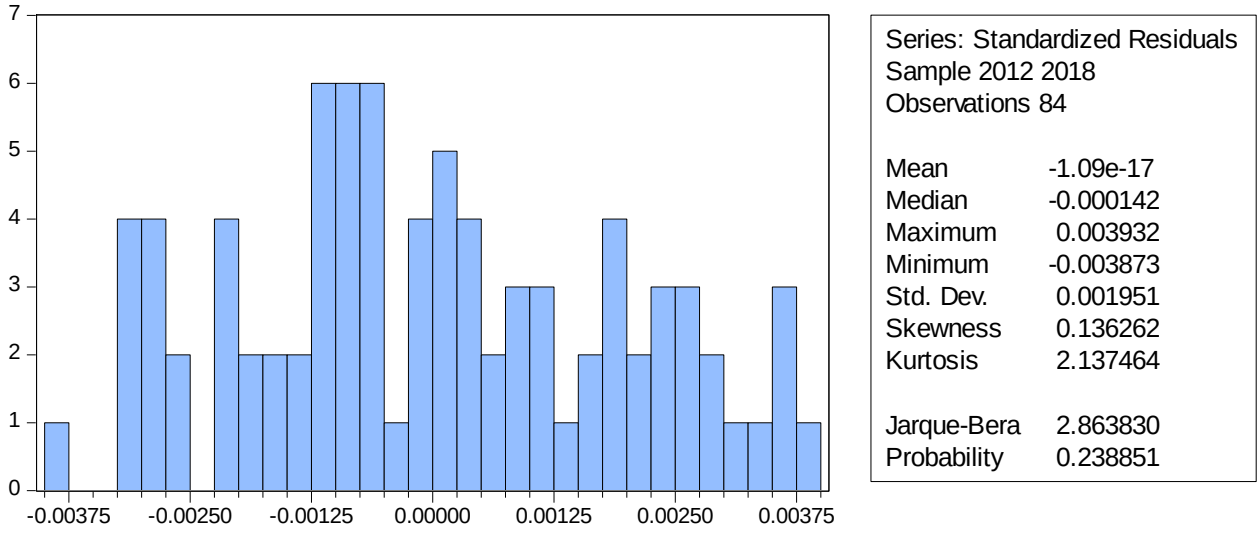
.

4.3.2. Normality Test

Normality, the most fundamental assumption in data analysis, refers to the shape of data distribution for an individual metric variable. Normality is tested using graphical and statistical tests.One of the most commonly applied tests for normality is the B era-Jarque (BJ) test. Bera-Jarque uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments the mean and the variance (Brooks, 2008). In case of this study, the researcher used Bera-Jarque test to check normality assumptions.

As shown in the graph 4.5 below kurtosis approaches to 2 (i.e. 2.1374), and the Bera-Jarque statistic p-value was not significant even at 5% significance level as per the P values shown in the histogram below, has a P-value of 0.2388. Hence, the null hypothesis that is the error term is normally distributed should not be rejected and it seems that the error term in all of the cases follows the normal distribution. So, the residuals are normally distributed in this study, concluded that there is no the problem of normality on models.

Figure 4.5: Graphical Test of Normality Using Histogra



4.3.3. Multi-colinearity Teset B/N Independent variable

Figure 4.6 tests of multi-colinearty

	BZ	LTDR	LQR	FER	CASR
BZ	1				
LTDR	-0.3762583132498005	1			
LQR	-0.1764158773284718	0.1327981468853721	1		
FER	0.009948588825968559	0.3487476675087481	0.5054829532313607	1	
CASR	-0.9546144042213277	0.4214296118338555	0.4091991192651501	0.1926022446406942	1

Source; ***from Eview 9 computation***

This assumption is concerned with the relationshipe that exists 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. According to Churchill and Iacobucci (2005), 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, however, cannot be perfectly correlated.

Multicollinearity occurs when independent variables are highly correlated with each other than with the dependent variable. Different researchers quoted varied level of correlation coefficient that brings about multicollinearity problem. According to Hair et al (2006) if the correlation

coefficient is above 0.9 this could cause multicollinearity problem and the results may not be reliable. In accordance with the correlation matrix on Table 4.2 (on page,28), all the correlation coefficients of independent variables against other independent variable were below 0.9. Thus, the multicollinearity assumption was not violated.

4.3.4 Model Selection; Fixed Effect versus Random Effect Models

As noted in Brooks (2008), there are two panel data estimator approaches that can be employed in financial research: fixed effects model and random effects model. For choosing the best way for data analysis running the Housman test distinguishes the appropriate model. The Hausman test checks a more efficient model against a less efficient but consistent model to make sure that the more efficient model also gives consistent results (Li Yuqi, 2007).

According to Brooks (2008), if the p-value for Hausman test is less than 5%, this shows the fixed effects model is appropriate than random effects model. Otherwise the random effect model is selected. According to Table 4.6 below, the Housman specification tests shows that the model has a p value of (1.000). This indicates that the random effect model is preferred. Therefore, in this study random effect model was used to test the impact of capital structure on MFIs profitability.

The result from Housman test in table allow as to not reject the null hypothesis that random model is bitter in this regression analysis. This implies that a random effect model is more appropriate than fixed effect model to undertake the panel regression estimation for this study.

Table 4.7 Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	5	1.0000

4.4. Regression Analysis Results

As shown in chapter three, the model used to find out and explain the association between the dependent variable & the independent variables was:

$ROA_{i.t} = \alpha + \beta 1\ (LQR)_{i.t} + \beta 2\ (LTDR)_{i.t} + \beta 3\ (CASR)_{i.t} + \beta 4\ (FER)_{i.t} + \beta 5\ (BZ)_{i.t} + \varepsilon_{i.t}$

Where:

LQR= Liquidity ratio

LTDR= Loan to deposite ratio

CASR= Capital stracture

FER= Forign exchange rate

BZ = Bank size

ε =error term

Under the following random effect regression out put the beta coefficient shows positive and negative values. Beta coefficient indicates the level of influence of independent variables over dependent variable. The P-value indicates at what percentage or precession level of each variable is significant. R-square values indicate the explanatory power of the independent variables over dependent variable. Therefore, the next part discusses the output of random effect model in detail. As the below table 4.8 shows, the random effect panel data regression model was implemented to identify the relationship between the dependent variable and the independent variables.

Table 4.8 regression computition result

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects)

Date: 04/25/20 Time: 00:07

Sample: 2012 2018

Periods included: 7

Cross-sections included: 12

Total panel (balanced) observations: 84

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.002252	0.004501	-0.500332	0.6183
BZ	0.011436	0.001416	8.076335	0.0000
CASR	0.011132	0.001356	8.209656	0.0000
FER	-0.128487	0.016144	-7.958910	0.0000
LQR	7.57E-05	2.73E-05	2.769664	0.0070
LTDR	-0.002015	0.003992	-0.504766	0.6151

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.002005	1.0000

Weighted Statistics

R-squared	0.774601	Mean dependent var	0.019675
AdjustdRsquared	0.760153	S.D. dependent var	0.004110
S.E.of regression	0.002013	Sum squared resid	0.000316
F-statistic	53.61073	Durbin-Watson stat	1.779428
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.774601	Mean dependent var	0.019675
Sumsquared resid	0.000316	Durbin-Watson stat	1.779428

The random effect regression result shown in the table 4.8 above, the R-squared of 0.774601 and Adjusted R-squared of 0.760153, which indicates that the independent variables that were used

in this study explains 77.46% of the dependent variable. The remaining 22.54% was influenced by other factors that were not included in this study. Meaning that, other factors that were not studied in this research affects 22.54% of commercial banks profitability, which is giving room for further research to investigate the other factors.

As the above table 4.8 presents, Liqudity raio, Capital stracture, and Bank size were positive sigenificance impacts on the profitability of commercial banks. On the other hand Loan to deposite ratio were negatively affects and insignificant impact on the profitability of the commercial banks. But forign exchange rate was negative (inverse) relation and have significant impact on profitability.

The above table also depicts that, liquidity ratio,capital stracture, bank size, and forign exchange rate were show at significance level because it below 5%,or (0.05). wehreas loan to deposit ratio shows at insignificance level becuase its above 5% or it shows 61% .

4.5.Discussion on Regression Results

LIQUIDITY RATIO (LQR)

Regarding to liquidity ratio, the results implies that the effect of liquidity ratio was statistically positivity significant impacts for its 1%(0.7 approch to one) of significance level (p-value= 0.0070) and has a positive influence on profitability (ROA)and the coefficient value(7.57) The result revealed that, the increase of liquid ratio asset leads to the enhancement of profitability. The empirical finding provides support to earlier study by among others (Eichengreen and Gibson, 2001; Sufian and Habibullah, 2009; Gemechu, 2016; Melaku, 2016 and Birehanu, 2012). According to Chinoda (2014), the availability of liquidity is influences profitability since it enhances the capacity of the bank to acquire cash, in order to fulfil present and essential needs. Therefore, for commercial banks to gain public assurance, they should have sufficient liquidity to meet the demands loan holders and depositors needs. The finding was opposed with the study result of (Molyneuxet et.al.1992; Amdemichael, 2012 and Samuel, 2015) comes to a conclusion that a negative association exists between liquidity and profitability. Even if the above researcher shows or belive liquidity have negative association with its profitability, but in this research study it shows or conclude that liquidity ratio have positive relationshipe &significant impact on profitability.

Loan to Deposit (LTDR)

To concerned the impact of loan to deposit ratio, the result of the regression output shows that, it was statistically insignificant at 61%. significance level (p-value=0.6151) and has a negative impact on profitability (ROA). This means, it describes that one Birr given as a loan from a deposit has the effect of Birr 0.002015 were loss on commercial banks Ethiopia. According to Rasiah (2010), the banks offered more loans to the customers for the benefit of interest revenue, on the same time there was possibility for a risk of liquidity. Simultaneously it was negatively affects the bank profitability this means the customer unable to pay their debt. Before know many researchers show that, loan to deposit ratio have inverserelationpe with profitability. At the same time thise researche also support the above researcher idea , loan to deposit ratio have invers relationshipe to its profitability with in insignificance impacts by the evidence of regration computation results of the above table 4.8.

Capital Stracture (CAS); As aresults of regration model Capital structure had statistically significant at the (p-value=0.0000 and the coefficient value was (0.011132) have posetive relationship with profit. Does not interpertate thise variable because it was control variable.

Foreign exchange rate

The proxy for foreign exchange rate was the official exchange rate it refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. The output of the regression analysis proves that, the existence of negative or inverse relationship between foreign exchange rate and profitability with in a significant impacts. As per the output foreign exchange rate was significant as indicated by the p-values(0.00).The result was in line or semilar with the finding of Samuel (2015) and against the study of Gemechu (2016), in argued that exchange rate has negative (inverse relationshipe) and significant impact on bank profitability.

Bank Size

Size is used to capture the impact of bank size on profitability, and is measured as the logarithm of total assets. The result indicates that size is positively related to profitability and statistically significance level (p-value = 0.0000). However, the coefficient 0.011436 indicates that when the log of the bank size increases by 1 unit, the other things remain constant profit (ROA) of the

bank will enhanced by 1.1%. According to the result of this study, increase in bank size does lead improve the profitability of the commercial banks. The advantage of the economies of scale is not available for attaining the profit. Thise research study(my research result) was similar with Shih et al. (2007), in Chinese banks using several bank-specific factors and Tesfaye (2014), who studied the determinants of Ethiopian commercial banks performance. The study result is refuting with the finding of (Melaku, 2016; Birehanu, 2012; Amdemichael, 2012; Samuel, 2015; Habtamu, 2012; Moges, 2017; Habibullah, 2009 and Kosmidou, 2008), among other found statistically significant and has a positive impact on bank profitability.

Table 4. 9 Description of the variables and their expected relationship

Explanatory variables	Expected impact	Actual impacts
		Profitability (ROA)
LQR	Positive	Positive & significant
LTDR	negative	negative & insignificant
CASR	Postive	positive & significant
B SIZE	positive	posetive significant
FER	negative	negative & significant

CHAPTER FIVE

5. Conclussion and Recommendations

5.1. Conclusion

The previous chapter presented the results and finding of the study while this chapter discusses about conclusions and recommendations based on the results and findings. Accordingly this chapter is organized into two sub-sections. Section 5.1 present the conclusions and section 5.2 presents the recommendations.

The main objective of this study was the impact of liquidity on financial profitability of commercial banks of Ethiopia and additionally the relationships between other five explanatory variables as indicates chapter four in multi-colinearty tests. To achieve the intended objectives the study used quantitative approaches panel data analysis methodology. The panel data were collected from audited financial statements particularly balance sheets and income statements of tewlve commercial banks. over the time period from 2012- 2018. The collected data were analyzed through a random effect model using statistical package ‘eview 9.

In order to conduct the empirical analysis, one dependent variable and five independent variables were selected from prominent previous research works on the impact of liquidity on financial profitability of commercial banks of Ethiopia . Return on Asset as a measure of profitability of commercial banks were dependent variable, while the independent variables were ,liquidity ratio, loan to deposite ratio, capital stracture, forign exchange rate and bank size.

The results of the random effect estimation model showed the existence of the following relationship between profitability and five independent variables. Capital structure,liquidity ratio,bank size was measured by, capital & reserve over total asset,liquid asset over current liablitie, logarizem of total asset respectively, and have positive significance relation shipe

with profitability, whereas loan to deposit ratio were measured by Gross loan & Adevance over total deposite, while forign exchange rate was measured by anull NBE reports based on the current exchange rates of local and forign currency, even if both have negative relation (inverse relationship) with profitablity,LTDR is insignificance correlated with ROA.

In conclusion, the finding of the study suggests that liquidity had significant impact on profitability of commercial banks in Ethiopia. And implies managers need to consider this impact in their financing or perofitablity decision.

5.2. Recommendations

Based on the findings obtained from the result of the study, the research forwards these recommendations;

- The Bank should adopt international standards in the liquidity management practice as it affects the overall performance;
- The Bank should provide adequate training to the concerned staff members as to the utilization and analysis on liquidity measurement tools;
- The Bank should introduce new liquidity measurement tools as per the current international practice;
- The bank should broaden the deposit bases into the masses so as to minimize the expected concentrations and sudden deposit run-off;
- The bank should enhance coordination among Accounts and Finance Department, Treasury & Fund Management Department, Asset Liability Committee (ALCO) and other functional units;
- The ultimate responsible organ of the Bank is the Board of Directors. Thus, trainings related to liquidity management practices and the associated liquidity risk should be provided to board of director's members;
- There has to be further research on the area of factors affecting banks liquidity in Ethiopia by incorporating regulatory factors and other bank specific and macroeconomic factors.
- Gaining further insight into the liquidity made available to a market by banks is crucial. Liquidity is not only of importance for banks but also for the health and functioning of the real economy.

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APPENDIXS

Main body of Excle

year	Id	ROA	LQR	LTDR	CaSr	Bz	Fer
2012	1	0.02145	17.10750	0.57556	3.91590	0.11003	0.1659
2013	1	0.02030	15.99838	0.55344	4.00558	0.10935	0.1726
2014	1	0.02158	22.52026	0.55637	4.05217	0.13559	0.18239
2015	1	0.01944	24.37245	0.53113	4.13569	0.13247	0.1911
2016	1	0.02408	27.52920	0.58758	4.22603	0.12624	0.20167
2017	1	0.02499	31.42139	0.67279	4.40355	0.11470	0.21133
2018	1	0.02165	40.59325	0.69747	4.50493	0.13273	0.22427
2012	2	0.02037	16.30810	0.59804	4.07688	0.13491	0.1659
2013	2	0.02041	17.37092	0.61458	4.17198	0.13535	0.1726
2014	2	0.02335	31.12153	0.61014	4.30165	0.12609	0.18239
2015	2	0.02669	27.47642	0.67396	4.37785	0.12947	0.1911
2016	2	0.02470	40.33949	0.67672	4.47143	0.12886	0.20167
2017	2	0.02441	45.23659	0.73801	4.62299	0.11108	0.21133
2018	2	0.02700	86.61954	0.71457	4.74247	0.08812	0.22427
2012	3	0.00965	2.91620	0.53616	3.10891	0.18376	0.1659
2013	3	0.01057	3.10370	0.61445	3.34189	0.17364	0.1726
2014	3	0.01644	6.26928	0.58887	3.44924	0.19707	0.18239
2015	3	0.01624	3.15258	0.61133	3.62034	0.17421	0.1911
2016	3	0.01503	6.39205	0.69888	3.85711	0.14733	0.20167
2017	3	0.01920	7.07275	0.69204	4.02073	0.17972	0.21133
2018	3	0.01330	6.86699	0.65064	4.14823	0.15650	0.22427
2012	4	0.01146	2.48689	0.72173	3.13514	0.21026	0.1659
2013	4	0.01272	3.99458	0.61348	3.32806	0.17585	0.1726

2014	4	0.01520	6.73639	0.62433	3.47885	0.17157	0.18239
2015	4	0.01700	7.13024	0.69064	3.65318	0.15061	0.1911
2016	4	0.01598	10.08580	0.67449	3.83385	0.14091	0.20167
2017	4	0.01833	15.50908	0.69545	3.99211	0.13778	0.21133
2018	4	0.01421	26.45178	0.68778	4.11465	0.15232	0.22427
2012	5	0.01646	2.48689	0.72173	3.56475	0.11366	0.1659
2013	5	0.02003	3.99458	0.61348	3.81549	0.10644	0.1726
2014	5	0.01520	6.73639	0.62433	3.86635	0.14833	0.18239
2015	5	0.01700	7.13024	0.69064	4.05926	0.12309	0.1911
2016	5	0.01598	10.08580	0.67449	4.02638	0.11490	0.20167
2017	5	0.02122	15.50908	0.69545	4.24857	0.08559	0.21133
2018	5	0.02421	26.45178	0.68778	4.47550	0.07949	0.22427
2012	6	0.02380	35.33416	0.57757	4.24354	0.10433	0.1659
2013	6	0.02975	35.43936	0.55909	4.29550	0.10359	0.1726
2014	6	0.02675	42.38152	0.53331	4.34168	0.11828	0.18239
2015	6	0.02867	40.23626	0.58176	4.39382	0.11807	0.1911
2016	6	0.02584	50.57693	0.55782	4.45601	0.11750	0.20167
2017	6	0.02319	30.76857	0.65087	4.53938	0.11532	0.21133
2018	6	0.02450	56.95270	0.64706	4.65730	0.12915	0.22427
2012	7	0.01917	6.87731	0.55893	3.39147	0.17934	0.1659
2013	7	0.01346	7.22174	0.62590	3.46871	0.18418	0.1726
2014	7	0.01476	10.55916	0.57357	3.55791	0.17375	0.18239
2015	7	0.01518	10.31586	0.63503	3.76785	0.14031	0.1911
2016	7	0.01442	14.14800	0.67946	3.90951	0.13177	0.20167
2017	7	0.01480	12.50324	0.62516	4.04044	0.13201	0.21133
2018	7	0.01729	15.80686	0.63353	4.15593	0.12632	0.22427
2012	8	0.02228	18.33043	0.63529	3.91780	0.18463	0.1659
2013	8	0.02062	17.47510	0.68262	3.96116	0.18218	0.1726

2014	8	0.02411	18.33786	0.68251	4.03130	0.18278	0.18239
2015	8	0.01692	16.53212	0.70534	4.12242	0.16425	0.1911
2016	8	0.01798	21.10978	0.60468	4.19949	0.15906	0.20167
2017	8	0.01985	25.74653	0.65247	4.32263	0.14054	0.21133
2018	8	0.01929	38.36618	0.62438	4.42633	0.12666	0.22427
2012	9	0.01845	5.23688	0.48156	3.44520	0.15702	0.1659
2013	9	0.01771	6.73092	0.53147	3.59231	0.14001	0.1726
2014	9	0.02003	16.14178	0.50592	3.78899	0.12168	0.18239
2015	9	0.02219	16.17173	0.64559	3.97931	0.10333	0.1911
2016	9	0.01956	19.00620	0.55260	4.05237	0.11681	0.20167
2017	9	0.01770	22.16951	0.53492	4.21200	0.10223	0.21133
2018	9	0.02058	45.21717	0.50025	4.37650	0.10890	0.22427
2012	10	0.02162	21.38261	0.60457	3.94383	0.12538	0.1659
2013	10	0.02343	17.38447	0.58421	3.99903	0.12038	0.1726
2014	10	0.02040	25.57772	0.56930	4.07468	0.13264	0.18239
2015	10	0.02223	21.77414	0.58115	4.15718	0.11742	0.1911
2016	10	0.02201	21.45485	0.65459	4.23729	0.12001	0.20167
2017	10	0.02063	23.06372	0.72682	4.34050	0.11485	0.21133
2018	10	0.02046	37.03130	0.64430	4.44764	0.10538	0.22427
2012	11	0.02235	16.88131	0.61924	3.92154	0.19218	0.1659
2013	11	0.02144	17.39122	0.62116	4.01677	0.17611	0.1726
2014	11	0.02008	10.68571	0.54916	4.05087	0.19072	0.18239
2015	11	0.02262	20.53112	0.61513	4.13708	0.17609	0.1911
2016	11	0.02362	24.48252	0.67755	4.20922	0.17331	0.20167
2017	11	0.02162	35.26338	0.73013	4.32117	0.16019	0.21133
2018	11	0.02262	38.64540	0.72101	4.43761	0.13970	0.22427
2012	12	0.01616	3.52302	0.56484	0.14715	3.37917	0.1659
2013	12	0.01616	5.08055	0.54665	0.15640	3.51168	0.1726

2014	12	0.02002	10.27436	0.47180	0.26178	3.59381	0.18239
2015	12	0.01616	7.10263	0.56410	0.14571	3.68792	0.1911
2016	12	0.01962	11.33304	0.59304	0.15369	3.86770	0.20167
2017	12	0.01862	19.43331	0.54219	0.20098	3.98539	0.21133
2018	12	0.01616	25.91610	0.48773	0.20835	4.09478	0.22427

APPENDIX Results of Hausman test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	5	1.0000

APPENDIX Results of regression computition's

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects)

Date: 04/25/20 Time: 00:07

Sample: 2012 2018

Periods included: 7

Cross-sections included: 12

Total panel (balanced) observations: 84

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.002252	0.004501	-0.500332	0.6183
BZ	0.011436	0.001416	8.076335	0.0000

CASR	0.011132	0.001356	8.209656	0.0000
FER	-0.128487	0.016144	-7.958910	0.0000
LQR	7.57E-05	2.73E-05	2.769664	0.0070
LTDR	-0.002015	0.003992	-0.504766	0.6151

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.002005	1.0000

Weighted Statistics			
R-squared	0.774601	Mean dependent var	0.019675
AdjustdRsquared	0.760153	S.D. dependent var	0.004110
S.E.of regression	0.002013	Sum squared resid	0.000316
F-statistic	53.61073	Durbin-Watson stat	1.779428
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.774601	Mean dependent var	0.019675
Sumsquared resid	0.000316	Durbin-Watson stat	1.779428

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BY: SHIFERAW MISGAN

ID NO…….BER/290/10

APPROVED BY THE COMMITTEE OF EXAMINERS

Advisor Name	**Signature**
Examiner Name	**Signature**