

**ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS
AND ECONOMICS**

DEPARTMENT OF ACCOUNTING AND FINANCE



**THE EFFECT OF LIQUIDITY ON FINANCIAL PERFORMANCE OF
SELECTED PRIVATE COMMERCIAL BANKS IN ETHIOPIA**

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**A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES OF ADDIS
ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTERS OF SCIENCE (MSC) IN ACCOUNTING AND
FINANCE**

March, 2021

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Addis Ababa, ETHIOPIA

DECLARATION

I hereby declare that this thesis entitled “**THE EFFECTS OF LIQUIDITY ON FINANCIAL PERFORMANCE OF SELECTED PRIVATE COMMERCIAL BANKS IN ETHIOPIA**”, has been carried out by me under the guidance and supervision of **Abebaw Kassie (PhD)**. This thesis is original and has not been submitted for the award of any degree or diploma to any university or institution.

Name of the student

Signature

Date

ENDORSEMNT

This thesis has been submitted to Addis Ababa University College of business and Department of Accounting and Finance for examination with my approval as advisor.

Advisor

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AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE**

EXAMINERS' APPROVAL SHEET

We, undersigned, members of the Board of Examiners of the final open defense by **Soliyana Birhanu Guta** have read and evaluated his thesis entitled “**The effects of liquidity on Financial performance of selected private commercial banks in Ethiopia**”, and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree of Masters of Science (MSC) in Accounting and Finance.

Thesis Grade: _____

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List of Acronyms

NBE	National Bank of Ethiopia
AIB	Awash International Bank S.C
DB	Dashen Bank S.C
UB	United Bank S.C
WB	Wogagen Bank S.C
NIB	Nib International Bank S.C
BOA	Bank of Abyssinia S.C
CBO	Cooperative Bank of Oromia S.C
LQ	Liquidity
CA	Capital Adequacy
MC	Market Concentration
AQ	Asset Quality
OE	Operational Efficiency
I	Inflation
ROA	Return on Asset
ROE	Return on Equity
SPSS	Statistical Package for Social Science

ABSTRACT

The main purpose of this study is to examine the effect of liquidity in the financial performance of selected private commercial banks. a total of 8 banks were taken purposefully taken by considering the operation time as criteria of selection and the annual audited financial report were analyzed from the period 2010 to2019 in doing so explanatory research design, Pearson correlation and multiple linear regression analysis were applied. In conducting this study ROA and ROE taken as dependent variable whereas Liquidity Risk, Market concentration, capitalization, asset quality, operational efficiency and inflation were taken as independent variable the findings of this study confirm that Liquidity indicators have statistically significant effect on Financial performance of selected private commercial banks

liquidity dimensions; Liquidity Ratio, Asset Quality, Operational efficiency, Capital Adequacy and Market Concentration were found to exert a unique influence to profitability indicators of ROA & ROE, implying that these factors has a good prediction power on the performance of commercial banks in Ethiopia. It has been recommended that, maintaining optimal level of liquidity is essential for all commercial banks to survive in the sector by developing sound asset quality management through applying good follow-up on Loans structures, by strength their capital structure through approaching a very good capital adequacy management, creating strong follow up that helps on maximizing their operational efficiency via controlling cost and maintaining the desire profit even in unforeseen situations. Since maintaining the preferred and highest level of liquidity is essential for the existence, survival and success of the banking sector in every conditions.

Keywords: Liquidity, Profitability, Inflation, Operational Efficiency, Market Concentration

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Recently, there are a lot of changes in the existing environment this is due to modernization, globalization, and creativity etc. the current environment become very dynamic, intangible and full in very rapid change. All business enterprises specifically the banking sector participate their daily activity via a very complex and highly competitive environment so as to survive in unpredictable as well as dynamic situations (Rahel, 2014).

Financial institutions are those who facilitate financial service for the interested users. Those financial institutions mainly rendered service to their customer via mobilizing resource from those business as well as persons who has surplus cash and in need on making investment to those who have scarce resource to lead their daily activities through playing an intermediate role among these parties. Banking industry have a pivot roll on playing as financial intermediaries. An adequate financial intermediation requires purposeful attention of bank management to profitability and liquidity, which are two conflicting aims of the commercial banks. These objectives are parallel in the sense of achieving greater profit that erode liquidity problem and solvency positions and vice versa. Practically, profitability and liquidity are effective indicators of the corporate health and performance of commercial banks (Eljelly, 2004).

According to Dakito (2015), the growth and stability of the financial condition of a country depends on the soundness of its banking sector. The decisiveness of the banking system is an important concern for regulatory authorities, bank customers and shareholders. To avert the financial disaster of the banking activity is profoundly controlled all over the world. This involves controlling of bank risk and ensuring compliance with set of prudential regulations set by central banks such as the liquidity requirement, capital adequacy rules and risk management tools.

As Richard Charmler et al. (2018), define liquidity as the ability of a firm to pay its current liabilities using its current assets. A bank is liquid when it is capable of meeting its own obligations when they become due, repay deposits and to make such payment based on customers order.

As indicated by Muhammad Shaukat Malik et al. (2015) the term liquidity is basically a technique which is used by an organization to convert its assets (current) into cash. Whenever a firm/organization needed to meet its financial obligations, it converts its current assets into cash form to pay the due liabilities at maturity date. As and when the bank needed to pay its short term

obligations to its debtors and creditors/suppliers, it must have an ability to satisfy its creditors for this purpose, and this ability is named as “Liquidity” of a bank. This can be defined as: A procedure which is adopted by any financial institution to convert its assets into to cash for payment of near term obligation. At the end of 2019\20 fiscal year there were 18 commercial banks functioning in Ethiopia, among these 16 are private commercial banks while the rest are governmental banks. This study examine the effect of liquidity via applying various factors that helps to achieve the optimal level of liquidity in order to maintain profitability in case of commercial banks in Ethiopia particularly sustaining their performance even in unforeseen or unexpected environment.

1.2 Statement of the Problem

Liquidity management is the process of managing the trade –off between the costs of holding idle fund on the one hand and dealing with shortages on the other hand. Liquidity management is an ongoing process not a onetime task. Liquidity management is of importance in financial management decisions. And the optimal of liquidity management could be achieved by a company that manages the trade-off between profitability and liquidity management (Berline, 2017)

Muriithi and Waweru (2017) concluded in their study that it is advisable for a bank’s management to pay the required attention on liquidity management, having noted the results in their study showing the negative effect of liquidity risk on financial performance of banks. So, through their financial intermediation role, commercial banks reactivate funds received from depositors by investing in different classes of asset portfolios. However, such business activity is not without problems since the deposits from these fund savers which have been invested by the bank for the purpose of profit maximization can be recalled or demanded even when the bank is not in a position to meet its financial obligations. The liquidity distress on the other hand in turn might lead to customer dissatisfaction and further erode the public confidence on the industry at large. In the meantime, by withstanding the intense competition in the banking sector due to the emergence of large number of new entrants, commercial Banks is expected to ensure Their operational profitability and at the same time meets the financial demands of their depositors by maintaining adequate liquidity. Moreover, there is also minimum weekly liquidity requirement by the central bank Commercial Banks are expected to attain and failure to do so might lead to unfavorable penalties.

Having a well-defined liquidity management policy is mandatory to all commercial banks that is used so as to tie the whole organization and there should be a liquidity control strategy that magnify any rules in related to management of assets and liabilities Yimer (2016). Maintaining a large number of liquid assets affects profitability of a bank, which raises the importance of liquidity management and

sustaining the optimal level of liquidity is a real art of bank's management. The problem then becomes how to identify the optimum level at which the banks can maintain their liquid assets in order to optimize these two objectives since each of the liquidity factors has a different effect on the bank's level of profitability.

This problem becomes more pronounced when the banks are occupied with the goal of profit maximization and tend to neglect the importance of liquidity management. However, without proper liquidity management activities, the profit maximization becomes a myth as it might lead to both technical and legal insolvency with the consequences of low patronage, deposit flight and erosion of asset base. Moreover, liquidity position of commercial Banks is challenged when the banks intends to finance long term projects that demand more moratorium period with short term customers' deposit.

There are also instances where liquidity position of commercial banks is affected by seasonality factors such as the harvesting season and annual profit tax settlement by corporate customers. Thus, unless these banks proactively manage their liquid assets, it might face stressful liquidity situation which is also another challenge to the bank in its daily endeavors.

There are few studies that have examined the effect of liquidity on profitability of commercial banks in Ethiopia such as Tsige (2017) shows that cash deposit ratio and capital ratio had statistically significant affect profitability among this factors cash deposit ratio had positive effect where a capital ratio had negative on profitability in addition deposit asset ratio and loan deposit ratio had positive but statistically insignificant effect on financial performance.

On the other hand Workineh (2015), tried to investigate the impact of liquidity on performance private banks he has founded that there is a significant relationship between performance (Profitability) and liquidity measures then again he has also indicted that further study has to be conducted by considering bank specific factors in addition mentioned on how to achieve optimal level of liquidity in commercial banks.

Unforeseen situations like COVID-19 will have significant impact on micro and macro economy of a country especially when we look at the banking industry under such situations the key factor which is deposit may decrease since in such situations depositors are forced to withdraw what they have in order to survive as a result liquidity risk may get aggravated furthermore, such challenge may increase the rate of non-performing loans (Asset Quality) since those (debtors) will suffer difficulties in generating sufficient income in which they can pay their debt on expected schedule. Most of these uncertain situations have challenges on the current economy via reducing gross domestic product, increasing inflation, creating high unemployment and reducing revenue (Nasir and

Hika, 2021).

On the other hand, accurately articulating the factors that influence level of bank`s liquidity also poses another problem. This research paper seeks to investigate how commercial banks able to achieve optimal level of liquidity and sustain in the industry especially with in unforeseen situations through applying various factors and all the above problems are what the study intends to consider, find solutions and make recommendations where necessary.

1.3 Objectives of the Study

1.3.1 General objective

The general objective of this study is to analyze the effect of liquidity on the performance of private commercial banks in Ethiopia under unforeseen situations.

1.3.2 Specific Objectives of the Study

In regarding to achieving the above general objective, the study was having the following specific objectives:

1. To investigate the effect of liquidity ratio on the performance of listed commercial banks in Ethiopia.
2. To explore the effect of market concentration on the performance of listed commercial banks in Ethiopia.
3. To investigate the effect of inflation on the performance of listed commercial banks in Ethiopia.
4. To investigate the effect of capital adequacy on the performance of listed commercial banks in Ethiopia.
5. To assess the effect of asset quality on the performance of listed commercial banks in Ethiopia.
6. To examine the effect of operational efficiency on the performance of listed commercial banks in Ethiopia.

1.4 Research Hypotheses

Fundamentally a study will base on Hypothesis. Hypothesis is an educated guess on the outcome of a research. Results from other literatures will be used to form expectations from the association of different factors therefore, based on the above objective, this research intends to assess the following six hypotheses. These hypotheses may be written as alternative hypotheses specifying the exact

results to be expected, and also may be stated in the null form, indicating no expected difference or no relationship between independent variables on a dependent variable Tsige,(2017).

1. H1: liquidity risk of a bank affects positively/negatively the bank's profitability.
2. H2: market concentration affects positively/negatively financial performance of the banks.
3. H3: Inflation affects positively/negatively banks profitability.
4. H4: capital adequacy affects positively/negatively financial performance of the banks.
5. H5: quality of assets affects positively/negatively financial performance of the banks.
6. H6: operational efficiency affects positively/negatively financial performance of the banks.

1.5 Significance of the Study

The finding of this study will help different stakeholders such as bank managers through initiating the commercial bank's Liquidity management to give due emphasis on the management of these identified variables and provides them with understanding of activities which helps on maintaining optimum level of liquidity in relation to their performance under unforeseen situation. In addition this study will contribute to the knowledge area and can also provide an opportunity for other researchers to have insight in area of the study and to conduct further researches on the subject matter.

1.6 Scope of the Study

There are sixteen private and one government owned commercial banks that are operating at national level to make investigation regarding to liquidity and its effect on the performance of commercial banks in Ethiopia, the study only focus on private commercial banks that have been in operation at least for the last ten years that covers a period starting from 2009/10 until 2019/20 fiscal year to conduct with significant period and recent time and only on eight leading private commercial banks in the country in terms of both branch network and market share namely, AB, DB, BoA, WB, UB, NIB, OIB and CBO so as to make the scope of study more manageable. This study concentrated on effect of liquidity indicators on banks performance by using variable such as return on asset (ROA) and return of equity (ROE) as dependent variable and liquidity indicators (i.e. Market concentration, capital adequacy, asset quality, Operational efficiency and inflation) as independent variable since such variables are determinants of the subject matter with all aspects related to bank specific, industry specific and macro specific factors.

1.7 Limitations of the Study

For the purpose of this study only secondary data has been used monetary policy measures that may affect commercial bank were not included.

1.8 Organization of the Study

This Study is organized in five chapters, the first chapter provides an introduction about the report. Chapter two explains review of related literatures, Chapter three describes detailed methodology employed in conducting the study ,Chapter four covers data presentation, analysis and interpretation . Finally Chapter five contains the overall conclusion of this study and provides recommendations based of the findings.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Theoretical review

This chapter consists of review of related literature and conceptual framework in addition arguments are built up on theoretical literature of bank liquidity and financial performance , further more empirical evidence studies relevant in the objectives of the study are incorporated.

2.1.1 Organization Performance

Organizations have a significant role in every one's day to day activity of life. Due to the fact that each and every management fundamental goal is focused on keeping continuous performance development within its organization.

Organization performance is set of financial and non- financial indicators which offer information on the degree of achievement of objectives and results. Vorhies and Morgan (2005) cited in Rahel (2014), said firm performance is a three dimensional construct that comprises the dimensions of customer satisfaction, market efficiency and corporate profitability. In a net shell organization performance is a pointer for the organizations putting their status on whether they are in the way on achieving their goals and objectives.

According to Rahel (2014), there are two factors that determine organizations performance. These are either internal or external factors. Internal factors are a conditions occurred within the organization and the organization can create a mechanism to control these factor by itself on the other hand external factors are factors which occur outside the organization and such kind of factors are beyond the capacity of the organization and it include macro-economic factors which can determine the performance of organizations.

2.1.2 Organization Performance Measurement

Various scholars describe the measurement of performance and its indicators. Rahel (2014) indicate the performance measurement is a periodic measurement of improvement towards a long and short period goals and revealing of the outcomes to the decision makers so as to enhance program performance.

According to Robert B. Carton (2004) cited in Rahel (2014), organizations performance measurement criteria's in to five sections accounting measures, operational measures, market based measures, survival measures, and economic value measures. Hear under are the most common measurements of accounting and operational measurements.

Accounting Measures

As indicated by Eyob (2010), financial performance measure the organization's basic economic targets. Increase in profitability and reduction on the operational cost and overall expenditures of the organization can be used as major financial performance indicators. Profitability and cost ratios such as return on assets (ROA), return on investment (ROI) and return on sales (ROS) and also total operating expenses to sales (OEXP/S), and General and Administrative expenses to sales (G&A/S) are the most widely used measures to evaluate the financial performance of an organization

Operational Measures

It shows how the organization is carrying out on non-financial issues. Measuring performance on non-financial dimensions has received renewed attention over the past many years as corporations have adopted a "balanced scorecard" approach for the integration of strategy and performance measurement Rahel (2014). It include market share, changes in intangible assets such as patents or human resources skills and abilities, customer satisfaction etc. Through applying both accounting and operational measures it is easy to estimate both the qualitative and quantitative sides of the operation of the organizations.

2.1.3 Performance Measurement of Commercial Banks

By bank performance, generally, it implies whether a bank has performed well within a trading period to realize its objectives. According to Rose (2001) cited in Rahel (2014), a fair evaluation of any bank's performance should start by evaluating whether it has been able to achieve the objectives set by management and stockholders. Certainly, many banks have their own unique objectives. Some wish to grow faster and achieve some long-range growth objective, others seem to prefer quiet life, minimizing risk and conveying the image of a sound bank, but with modest rewards to their shareholders (Rose, 2001 cited in Rahel, 2014).

Profitability indicators are the Return on sales (ROS), Return on Equity (ROE) and the returns on Assets (ROA) and cost indicators are total operating expense to sales (OEXP/S), General and Administrative expenses to sales G&AEXP/S and productivity measures total loans and deposits used

to evaluate banks performance and its productivity. These ratios are indicators of management efficiency, and rate of returns. These profitability measures vary substantially over time and from one banking market to another Girma (2012).

As described by Rahel (2014), Both ROE and ROA are commonly in use. ROA is the major ratio that indicates the profitability of a bank. It is a ratio of income to its total asset. It shows how efficiently the resources of the company are used to generate income. A higher ROA shows that the company is more efficient in using its resources on the other hand the ROE measure, which is the ratio of net income to equity, serves as another indicator of a firm's net profit margin.

Concerning cost measures, two cost related measures (ratios) are frequently used to measure relative performance: total operating expenses to sales (OEXP/S), and General and Administrative expenses to sales (G&A/S). Total operating expenses (defined as the sum of all operating expenses) serve as a proxy for the firm's total cost of operations (Girma 2012).

2.1.5 Concept of liquidity

Kimberly A, (2016) defines Liquidity as the amount of money that is quickly available for investment and spending. The concept of Liquidity has been a source of worry to the management of firms of the uncertainty of the future. Liquidity is a financial term that means the amount of capital that is available for investment. Today, most of this capital is credit, not cash. That's because the large financial institutions that do most investments prefer using borrowed money. High liquidity means there is a lot of capital because interest rates are low, and so capital is easily available.

As indicated by Vaita (2017), in banking, adequate liquidity means being able to meet the needs of depositors wanting to withdraw funds on demand and borrowers wanting to be assured that their credit or cash needs will be met. A bank is liquid when it can raise cash to honor loan commitments or unexpected deposit withdrawals without significant loss.

According to Amengor (2010) in relation to Commercial banks puts liquidity as the ability of banks to finance its contractual obligations such as lending, investment and customers' withdrawal of deposits and maturity of liabilities at the course of banks' activities.

According to Olanrewaju (2011), Liquidity can be defined as the state or condition of a business organization which determines its ability to honor or discharge its maturing obligations. These maturing obligations are composed of current liabilities and long-term debts. Liquidity can also be defined as a measure of the relative amount of asset in cash or which can be quickly converted into

cash without any loss in value available to meet short term liabilities. Liquid assets are composed of cash and bank balances, debtors and marketable securities. Liquidity is the ability of a firm to meet all obligations without endangering its financial conditions. Liquidity will help a firm to avoid a situation where a firm will be forced to liquidate with its attendant problems of selling assets at distressed prices and the extra fees paid to lawyers, trustees in bankruptcy and liquidators on liquidation. The definitions above imply that, as liquidity increases, the probability of technical insolvency is reduced. The definitions above went ahead to expand the views by recognizing two dimensions of liquidity namely the time necessary to convert an asset into money and the degree of certainty associated with the conversion ratio or price realized for the assets.

Marozva (2015) explains the term bank liquidity by categorizing it into two; market liquidity and funding liquidity. He defines market liquidity in the context of how easy a bank's security can be traded and on the other hand, the funding liquidity as how easy a bank can obtain funding to trade its security. He adds that both market and funding liquidity are complementary since bank performance (funding liquidity) is dependent on the ease of trading security. In view of Amengor's (2010), Alshatti (2015) argues that liquidity is the ability of banks to meet the financial needs of their increased assets and meeting liabilities as and when they fall due without the occurrence of unforeseen losses. From the definitions outlined above, it can be noted that the scopes of liquidity is based on the timing required in converting assets of banks into monetary asset or cash; the certainty with regards to the conversion and the value realized from the asset and the banks' ability to meet obligations without incurring losses. According to Koranteng (2015) banks' liquidity is dependent on its liquid assets, the bank's ability to acquire cash through deposits and finally, its ability to reinvest as and when needed.

2.1.6 Relationship between bank liquidity and bank performance

Bank liquidity like cash reserve requirement and liquidity ratios, nature of liquidity management and financial ratio analysis. His findings concluded that the quantum of a bank's liquid assets coupled with proper management measures had a positive relationship to the bank's performance (Abubakar, 2015).

As Marozva (2015) cited in Richard Charmler et al. (2018) clearly points out, there have been several studies conducted and still on-going debates to investigate the relationship between bank liquidity and bank profitability. He posited that the findings of these studies resulted in varying conclusions; whereas some researchers conclude that there is a negative relationship between these variables.

2.1.7 The Management of Liquidity in Commercial Banks

Liquidity management is of importance in financial management decisions. And the optimal of liquidity management could be achieved by a company that manages the trade-off between profitability and liquidity management. An analysis of the impact of liquidity on bank profitability for a sample of large U.S and Canadian banks had results show that profitability improved for the banks that held more liquid assets. However, at a certain point, holding further liquid assets diminishes the bank's profitability, all else equal (Sthapit & Maharjan, 2012).

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 banks 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 Olanrewaju, (2011).

2.1.8 Liquidity Measurement in Commercial Banks

A financial institution can utilize a number of sources to meet its liquidity needs; these include new deposits, maturing assets, borrowed funds and/or using the discount window (borrowing from the central bank). Given that access to these measurement and management is an important activity in most commercial banks Workneh (2015).

In the banking theory and practice, there are no generally accepted indicators measuring the liquidity of banks. In spite of the fact that there are not enough acceptable indicators for measuring the liquidity, different authors (Sinkey, 2000; Koch et al., 2000) cited in Berhanu (2015).

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 to 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 liquidity 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 (Adeyanju Olanrewaju, 2011).

2.1.9 The Importance of Liquidity in Commercial Bank Management

Liquidity is a measure of the obtainability of cash or near cash related item which change to cash whenever there is a demand for cash. It includes the rate and time of converting these near cash related item into cash so as to satisfy any demands. If one commercial bank is in managing its own liquidity, the stronger will be his position helps to drive for loanable funds.

“Adequate liquidity enables a bank to meet three risks namely: funding risk (the ability to replace net out flows of funds either through withdrawals of retail deposits or non-renewal of wholesale funds), Time risk (the ability to compensate for non-receipt inflows of funds if the borrower fails to meet their commitment at a specific time), lending risk (ability to meet requests for funds from important customers). It helps a commercial bank to meet customers' withdrawal and or demand for loans. This reduces the possibility of providing financing under very unfavorable loan agreement restrictions and

at relatively high interest costs. Liquidity management helps a commercial bank to maintain stability in operations and earnings by serving as a guide to investment portfolio packaging and management” Olanrewaju, (2011).

2.2 Empirical Review on the effect of liquidity on Performance of Commercial Banks

This section endowed with empirical literature on the impact of liquidity on profitability there was study done in Ghana to determine the factors that impacted the performance of Naara Banks in the upper east region in Ghana by Hadad (2013). The period of study is between 2000 and 2010. Multiple regression was used and the aim of the research was to determine the relationship between financial performances of Naara banks and its Liquidity, credit portfolio, total assets. The study results indicated a positive association between the two variable. Another study on effects of liquidity on Kenyan commercial banks was carried by Kamoyo(2006). The study was for period of 10 years involving 30 commercial banks. The research employed descriptive statistics, investigative questionnaires’ and regression analysis to establish the determinants and implied that there was an insignificant negative association between profitability and liquidity Bordeleau and Graham (2010) in their study found that the impact on profitability of a bank’s holdings of liquid assets (i.e., reserves) depends on the amount of funding that comes due in the short-term and on the general state of the economic cycle. All else equal, if a bank is more reliant on short-term funding, it may need to hold more liquid assets in order to maximize profits and continue its operation. Alashatti, (2015) centered on the effect of liquidity on Jordanian commercial banks profitability from 2012 to 2015.by taking a sample of thirteen banks selected and found the positive effect of quick and investment ration on the profitability while negative effect of capital and liquid ratio on profitability of Jordan banks. Nyaga, (2014) studied the effect of liquidity on the profitability of the Ukrainian companies by taking data from 2001-2010. By employing regression analysis and the conclusion indicates that rapid and current rations have positive significant result on profitability. Furthermore, Ibe, (2013) explored the effect of liquidity and profitability of Nigerian banks. Regression has been in study and three banks were randomly selected as a sample size. The outcomes express that liquidity is big issue for Nigerian banking industry.

2.3 Related Empirical Studies in Ethiopia

Few researcher studied the determinants of commercial banks liquidity and their impact on financial performance on commercial banks in Ethiopia. A study was done on the factors affecting profitability of Ethiopian banks Abera (2012) and focused on investigating specific factors in the industry that had a direct effect on the profitability of Ethiopian commercial banks. The study period was from 2000 to 2011 and the population for the research was commercial banks registered by NBE. 8banks were sampled and researched on. The regression analysis showed that liquidity had little impact on the profitability of banks. The regression analysis and extensive interviews showed that the association between the two variables was positive.

On other study done by Tsige (2017) on the effects of liquidity on commercial banks of Ethiopia covered from years 2005-2015 Shows that liquidity indicator defines profitability of commercial banks in Ethiopia to an important extent. The overall result obtained from the regression model used in the her research indicates that liquidity indicator such as Cash Deposit ratio (CDR) and Capital ratio (CR) have significant impact on the profitability of commercial banks in Ethiopia to an important extent. While Deposit Asset ratio (DAR), Loan Deposit ratio and Liquidity ratio results in lower significant level of profitability for commercial Banks in Ethiopia.

Workneh (2015) indicated in his study that covers study period (2010 to 2014) on the impact of liquidity on financial performance of private commercial banks in Ethiopia is inconsistent (both positive and negative) and the significant relationship varies from measure to measure. Finally, considering that some results show a statistically significant relationship between liquidity and bank performance while others display insignificant relation, it could be concluded that we cannot draw a firm conclusion of the relationship between liquidity and bank performance of private commercial banks in Ethiopia and recommended that There has to be further research apart from bank specific measures considered in this study on the relationship between liquidity and performance of private commercial banks in Ethiopia by incorporating regulatory factors and other bank specific and Macroeconomic factors.

2.4 Summary and Knowledge gap

As per the Empirical review of related literature the aim of identifying factors affecting bank profitability belong to Jordan, Ghana and Kenyan banks Liquidity is determined both by bank specific factors (such as size of the bank, capital adequacy, Non-performing loan, profitability, Loan growth and factors describing risk position of the bank), macroeconomic factors (such as different types of interest rates and indicators of economic environment) . Hence, as it was clearly indicated in

the empirical review, most of the studies regarding the determinants of banks liquidity were done on the worldwide base

In context of Ethiopia, the related study conducted by Amdemichael (2012) investigated the impact of some selected bank-specific, industry-specific and macro-economic factors on the profitability of the Ethiopian banking industry over the period of 2000 to 2011. The bank-specific factors that were used in this study include variables such as capital, liquidity risk, size, income diversification, asset quality, operational efficiency. On the other hand in this study only one industry-specific variable and two macroeconomic conditions indicator variables were employed (concentration, GDP and inflation).

Workneh (2015) assessed the impact of liquidity on the performance of commercial banks in Ethiopia even if it tries to identify most factors that affect bank profitability and finally at the end his study the researcher has indicated the there has to be conducted further research by including additional bank specific variables which will help to solve the problem of excess liquidity and its effect on reducing profits, and arbitrary high profitability with its consequence to reducing liquidity position.

Another recent study done by Tsige (2017) was attempted to see effect of liquidity indicators on profitability on commercial banks in Ethiopia. And she has induced that since liquidity and profitability are very crucial to the existence of banks; other explanatory variable of liquidity that has not been included in her study should be identified in order to see their effects on profitability. Therefore, the objective of this research thesis is to investigate the effect of liquidity on the profitability of private commercial banks in Ethiopia by applying various factors even with in unforeseen situations and to fill the knowledge gap that exists in the area

2.5 Variables Definition

2.5.1 Independent Variable

Industry Specific Factors

Industry specific factors are that are limited to certain industry and these factors only determine organizations operating within that industry and these factors are uncontrollable and hence external.

Market Concentration: is one of industry level factor that have an influence on performance of commercial banks. It measured the specific banks loan share over total loan of the banking industry. While explaining the relation between market concentration and performance of banks there are two approaches revealed, structure conduct – performance (SCP) hypothesis and efficient (EFS) structure hypothesis. (SCP) investigates the relation between highly concentrated market and profitability, states that an increase in market share and market concentration leads to monopoly powers and (EFS) investigate if efficiency of larger banks affects its profitability (Rahel , 2014)

Bank Specific Factors

Bank specific factors are determinants of commercial banks performance that are specifically in related to the bank itself and these factors are controllable by the bank itself.

Liquidity risk: Liquidity risk is one of the types of risk for banks; when banks hold a lower amount of liquid assets they are more vulnerable to large deposit withdrawals. Therefore, liquidity risk is estimated by the ratio of liquid assets to total assets Amedemicael, (2010)

Capitalization: Capital should be the most important variable in determining the performance of commercial banks. Banks with good capital structure tend to borrow less in order to support their level of asset also it will increase their ability to absorb and handle risk exposer (Rahel, 2014). It is used to measure the internal strength of a bank to withstand losses during financial crisis. It is a measure of bank`s ability to absorb any unfavorable shocks during crisis and used to minimize distress. It is computed by dividing total capital of the bank to its risk weighted assets and used to absorb risks like credit, market and operational. Thus, maintaining adequate capital enables banks to absorb potential losses and protect its debtors by large

Asset Quality: Asset quality of commercial banks shows the level of loans in relation to the total asset of banks. The higher the ratio the poorer the quality and therefore the higher the risk of the loan portfolio will be. This means since high asset quality ratio implies the bank`s asset highly dominated by loans and at the time of loan default performance of banks will be affected. (Rahel, 2014).

Operational efficiency: One of the major bank specific factors that determine the financial performance and the profitability of banks is Operational efficiency. Operational efficiency on the other hand is represented by Cost to income ratio. Accordingly, Operational quality can also be measured by the efficiency in utilizing scare resources, operating cost reduction and profit maximization among others. Hence, the quality of management exhibited by the finance department

of banks level of operating expenses in turn affects profitability and financial performance to large extent. Cost to income ratio shows the overheads or costs of running the bank, including staff salaries and benefits, occupancy expenses and other expenses such as office supplies, as percentage of income. It is used as an indicator of management's ability to control costs and is expected to have a negative relation with profits, since improved management of these expenses will increase efficiency and therefore raise profits. It is also one of the key drivers of profitability that is examined. (Amdemikael, 2012).

Macro Economy factor:

The macroeconomic control variables are external for banks managers and these factors are uncontrollable.

Inflation: it is an important macro-economic factor which may affect both the costs and revenues of banks. Inflation rate probable to have effect on the profitability of commercial banks. Revell (1979) cited in Rahel (2014) noted that variations in bank profitability can be strongly explained by the level of inflation. at the time of high inflation depositors are forced to withdraw cash which influence the capacity of banks to give loan to potential borrowers. Inflation effect is not only on depositors but for borrowers it creates difficulty to repay their loans leads to loan loss. On the other hand if banks are able to anticipate inflation and manage interest rates accordingly they can benefit from increase in inflation rate during a period.

2.5.2 Dependent Variable

A. Return on Asset (ROA)

A basic measure of bank profitability that corrects for the size of the bank is the return on assets (ROA), which divides the net income of the bank by the amount of its assets. ROA is a useful measure of how well a bank manager is doing on the job because it indicates how well a bank's assets are being used to generate profits (Rahel, 2014).

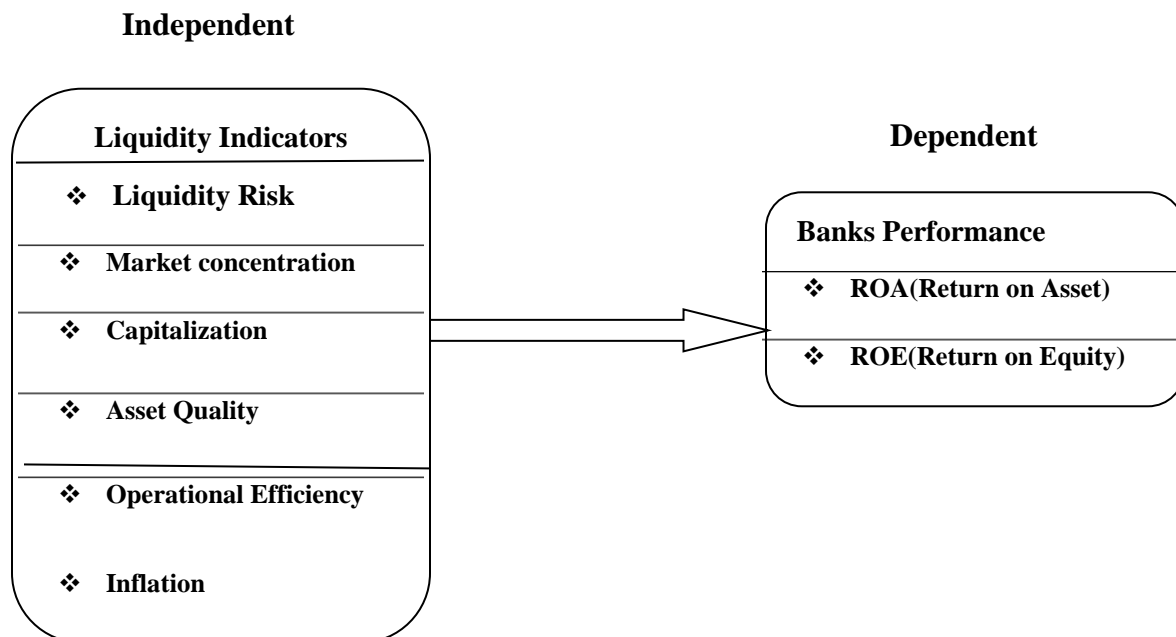
B. Return on Equity (ROE)

It measures how efficiently a bank can use the money from shareholders to generate profits and grow. It is a profitability ratio from the investor's point of view. This ratio calculates how much Investment is made based on the investors' investment in the bank, not the company's investment in assets or something else (Rahel 2014).

Table 1 - Summary of Variables to be tested measurement, notation and expected result

Variables	Measurement	Symbolization	Probable Result
Liquidity Risk	Liquid Asset/ Total asset	LIQ	-/Sig
Market concentration	Banks Share of Total Loans	MC	-/Sig
Capitalization	Total Equity /Total Asset ratio	CA	+/Sig
Asset Quality	Non-performing loans/gross loans ratio	AQL	-/Sig
Operational Efficiency	Cost/income ratio	CIR	+/Sig
Inflation	The annual inflation rate	IN	-/Sig
Return On Equity	Net Income after Tax/Total Shareholders' Equity	ROE	
Return On Asset	Net Income after tax/Total Asset	ROA	

Figure 1 Conceptual frame work on the Effect of Liquidity on performance of Commercial Banks



Source: Researcher Own Development based related Literature Review (Tsige, 2015 ; Workneh, 2017

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CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

In this specific chapter the research design, sampling design, source of data and data collection method, Model specification and data analysis are discuss in detail. All the element in this chapter are constructed based up on the purpose of the research which is identifying the effect of Liquidity on financial performance of private commercial banks in Ethiopia. Discussed here are the elements of methodology and research design:

3.1 Research design and Approach

Research approaches are plans and the procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation (John, 2014). The selection of a research approach is also based on the nature of the research problem or issue being addressed, the researchers' personal experiences, and the audiences for the study. There are three basic approaches to research (a) qualitative (b) quantitative (c) mixed methods. Quantitative survey is the most appropriate one to use if the purpose of an investigation is to describe the degree of relationship which exists between the variables.

Accordingly this research was conducted using quantitative research approach hence, it examined and measured the relationship between Profitability and Liquidity determinants in relation to commercial banks in Ethiopia. Therefore; the quantitative method is used by considering selected private Ethiopian commercial banks.

3.2. Research Design

A research design is a roadmap for managing the research process. Furthermore, it is noted that the three dimensions of research design are exploratory, descriptive and explanatory research. Descriptive method is set out to describe and to interpret what is going on. Descriptive research is concerned on with conditions or relationships that exist, practices that prevail, beliefs that are being felt or trends that are developing. On the other hand, explanatory research methodology will also be used n of variables in this study (Churchill, Brown and Suter, 2010).

The study adopt Explanatory Design through descriptive and inferential statistics since the objective of this study is to analyze the effect of liquidity on the performance of Ethiopian Financial

Institutions with reference to selected private commercial banks by deploying quantitative research approach by using secondary data collected from their financial statements

3.3 Source of Data and Collection Tools

The study used to investigate the effect of Liquidity variable that affect return on asset and return on equity. For the study purpose secondary data will be used in the study in order to evaluate the effect of Liquidity on performance of privet commercial banks in Ethiopia.

Secondary data will be useful to measure the measurable benefits that can be gained from liquidity through investigation on trend of banks on liquidity and its contribution to performance measures such as profits and cost measures of an organization.

3.4 Research Population, Sample Size, Sampling Method

3.3.1 Population

In this study the target population expected to be defined as commercial banks in Ethiopia; particularly the private commercial banks in Ethiopia that have been in operation at least for ten years. Due to the fact that the capital strength as well as the size gap between private and state owned banks like CBE limited the researcher to focus only on private banks on this study. So that the study population is sixteen private commercial banks.

The whole population is listed on the following table that shows banks based on their year of establishment in G.C.

Table 2: private commercial banks of Ethiopia

Name of the Bank	Establishment year (G.C)
Dashen Bank	1995
Awash International Bank	1994
Bank of Abyssinia	1996
Wogagen Bank	1997
United Bank	1998
Corporate Bank Of Oromia	2004
Nib International Bank	1999
Zemen Bank	2008
Oromia International Bank	2008

Anbesa International Bank	2006
Buna International Bank	2009
Birhan International Bank	2009
Dehub Global Bank	2012
Abay Bank	2010
Addis International Bank	2011
Enat Bank	2012

Source: www.nbe.org.et

3.3.2 Sample size

A sample means a part of a whole to describe what the rest is looks like and it helps to determine the corresponding value of the population and plays a vital role in business research. From the whole private banks in Ethiopia the researcher prefer only eight private commercial banks as a sample size.

3.3.3 Sampling Method

Sampling is the process or technique of selecting a suitable sample for the purpose of determining parameters or characteristics of the whole population (Adams et al., 2007). It is a means of obtaining data from a smaller group or sub set of the total population in such a way that the knowledge gained is representative of the total population.

Non-probabilistic sampling method particularly judgmental sampling method is used to select the sample. Selecting the sample is based on banks working experience and total capital

3.4 Methods of Data Analysis

The regression using one single independent variable is called uni-variate regression analysis while the analysis using more than one independent variable is called multivariate regression analysis (Tabachnick, 1996, Buyukozturk, 2002). Through Uni-varate regression analysis, the relations between a dependent variable and an independent variable are analyzed, and the equation representing the linear relations between the dependent and the independent variables is formulated. The regression models with one dependent variable, however, is known as multivariate regression analysis (koksai, 1985).

Multivariate regression analysis model is formulated as in the following

$$\text{ROA} = \beta + \beta_1 \text{Log (LIQ)} + \beta_2 \text{Log (CA)} + \beta_3 \text{(AQ)} + \beta_4 \text{(OE)} + \beta_5 \text{Log (MC)} + \beta_6 \text{Log (IN)} + \mu$$

$$\text{ROE} = \beta + \beta_1 \text{Log (LIQ)} + \beta_2 \text{Log (CA)} + \beta_3 \text{(AQ)} + \beta_4 \text{(OE)} + \beta_5 \text{Log (MC)} + \beta_6 \text{Log (IN)} + \mu$$

Where:

ROA = Net Income after tax/Total Assets

ROE= Net Income after tax/Total Shareholders' Equity

LIQ= Liquid assets/total assets ratio

MC (Market Concentration) =Banks Share of Total Loans

CA (Capitalization) = Total Equity/Total Asset Ratio

AQL (Asset Quality) =Nonperforming loans/Gross Loans ratio

Operational Efficiency (CIR) =Cost/Income Ratio

Inflation (IN) = the annual Inflation Rate

μ t: is a random error term

3.5 Model Assumption Test

1. Zero conditional mean of errors

The errors are assumed to have a mean of zero for any given value, or combination of values, on the predictor variables (Fox, 1997; Weisberg, 2005). When the conditional means of the errors are zero (and the other assumptions are also met), the desirable properties of OLS estimators discussed in this article apply regardless of whether the X values are fixed, as in an experiment, or random, as in sampled from a population (Berk, 2004; Snedecor & Cochran, 1980).

2. Independence of errors

The errors are assumed to be independent (Chatterjee & Hadi, 2012). Breach of this assumption leads to biased estimates of standard errors and significance, though the estimates of the regression coefficients remain unbiased, yet inefficient (Chatterjee & Hadi, 2012). Osborne and Waters (2002) state that independence of observations is required for linear regression

3. Homoscedasticity (constant variance) of errors

The model errors are generally assumed to have an unknown but finite variance that is constant across all levels of the predictor variables. This assumption is also known as the homogeneity of variance assumption. If the errors have a variance that is finite but not constant across different levels of the

predictor/s (i.e., heteroscedasticity is present), ordinary least squares estimates will be unbiased and consistent as long as the errors are independent, but will not be efficient (Weisberg, 2005).

4. Normal distribution of errors

This assumption has been discussed at length previously in this article. Normally distributed errors are not required for regression coefficients to be unbiased, consistent, and efficient (at least in the sense of being best linear unbiased estimates) but this assumption is required for trustworthy significance tests and confidence intervals in small samples (Cohen et al., 2003).

5. Multicollinearity

The presence of correlations between the predictors is termed collinearity (for a relationship between two predictor variables) or multicollinearity (for relationships between more than two predictors). In severe cases (such as a perfect correlation between two or more predictors), multicollinearity can mean that no unique least squares solution to a regression analysis can be computed (Belsley, Kuh, & Welsch, 1980; Slinker & Glantz, 1985).

3.6 Data Analysis Techniques

Before inserting the data gathered through secondary source into statistical package for social scientists the collected data's were checked whether any omitted variables are available and all intended data are gathered as needed. Descriptive statistics used in the form of mean and standard deviation for the various components of variables and profitability computation. The data is presented using tabulation where necessary. Important tests for validating assumptions of regression was performed to ascertain that the data fulfills the assumptions of normally distributed residuals and avoid complete interdependence of independent variables respectively.

According to the requirements of the theoretical model the test of measuring the association of variables is made using Pearson correlation, depending on result of normality. Correlation tests the "interdependency" of the variables discussed in the model. Regression analysis was computed to find out whether there is statistically significant relation surfaced between the two dependent variables and the six dimension of liquidity in selected private commercial banks. The analysis was performed using statistical package for social scientists (SPSS) Version 24 (IBM Corp, 2012).

3.7 Ethical Considerations

There is a growing emphasis on overcoming the ethical issues in business research because of the increased involvement of social responsibility and consumer's wellbeing. The data collected was treated and kept with confidentiality. No information was changed or modified, hence the information

was presented as it had been collected and the same is true with the literatures collected for the purpose of this study. There is no intention to use unfair mechanisms to influence the participants to obtain information. The questionnaire was completely anonymous and hence the information gathered is ascertained to be accurate to what had been intended to demonstrate in the study

CHAPTER FOUR

DATA PRESENTATION, ANALYSES AND DISCUSSIONS OF RESULTS

4. Introduction

The objective of this study is to identify the effect of liquidity on the performance of private commercial banks in Ethiopia for the period of 2010-2019. The previous chapter presented the research methods adopted in the study while this specific chapter covers on the analysis and interpretation of data. This chapter presents the overall state of the demographic profile of data collected from secondary source, results of descriptive analysis, correlation analysis and regression analysis. The findings of the study are analyzed based on the specific objectives and hypotheses of the study and discussion on the findings of the study are presented in relation to the effects of Liquidity on performance of selected commercial banks in Ethiopia. It is organized in order to discuss quantitative analysis and its result.

4.1. Quantitative Analysis Results

This particular section of the chapter communicates about the effect of liquidity on the performance of selected private commercial banks in Ethiopia. The analysis is made using annual balanced data, where all the variables are observed for each cross-section and each time period. The study has a time series segment covering from the period of 2010 up to 2019 and a cross section segment which considered eight private commercial Banks. I.e. DB, AB, UB, WB, NIB BOA, CBO, OIB.

4.1.1 Descriptive Statistics

In this section various statistical data analysis tools such as mean, standard deviation, frequency and percentile are used to analyze the collected data.

Table 4.1 indicates the results of the descriptive statistics for all variables involved in the regression model from 80 observations. The dependent variable is ROA and ROE the rest are independent variables (LIQ, CA, AQ, OI, MC and IN). Key figures, including mean, median, standard deviation, minimum and maximum values are reported. This is made to provide general picture about data used in the model.

Table 3 Descriptive Statistics Results

	ROA	ROE	LIQ	CA	AQ	OE	MC	I
Observation	80	80	80	80	80	80	80	80
Mean	.0254650 95	.20169 2452	.272940 295	.1284305 34	.0157 848	.3901683 12	.1102328 14	.1344341 91
Median	.0252608 43	.19492 5273	.232313 949	.1223857 43	.0146 096	.3825642 82	.1089763 40	.1012531 40
Std. Deviation	.0076447 99	.06269 9012	.130078 4777	.0285859 098	.0140 0783	.0987693 036	.0689514 802	.0795840 087
Skewness	.114	.271	.796	.624	1.182	1.109	.214	1.310
Kurtosis	.303	-.025	-.624	-.325	2.672	2.113	-.468	.562
Minimum	.0032913	.02864 50	.107166 6	.0787150	.0000 0	.2296431	.0010566	.0662813
Maximum	.0466814	.35670 30	.562012 2	.1921772	.0740 7	.7522619	.2597474	.3201479

Source: Financial statements of banks, NBE reports, computation on SPSS

From the above table, it is shown that out of 80 observations made, commercial banks in Ethiopia obtained average of 2.55% profit in terms of ROA and average of 20.17% profit in terms of ROE on the past decade, with maximum of 4.6% and 35.67% also minimum of 0.33% and 2.86 % values respectively. That means the most profitable banks earned 4.6% and 35.67% of profit after tax for a single birr invested in the assets and equity of the firm respectively. On the other hand, the least profitable banks managed to earn 0.33% and 2.86% of profit after tax for each birr invested in the assets and equity of the firm respectively. The standard deviation statistics for ROA was 0.007 and ROE was 0.062 which indicates that the profitability variation between the selected banks was very small. The result implies that these banks need to optimize the use of their assets as well as their equity to increase the return on their assets and equity which indicates that the profitability variation between the selected banks was very small.

While looking at the study variable Liquidity, commercial banks have managed to invest average of 27.29 million birr on optimization of their liquidity for the past ten years. High demanding liquidity

banks invest 56.20 *million* birr while banks found in low liquidity group perceived 10.72 million-birr investment. The standard deviation value of 0.13 *shows* there is smaller variation between the two groups.

4.1.2 Correlation Matrix of Variables

Correlation analysis is bivariate analysis used for exploiting the presence of relation (association) among variables. The value of the correlation coefficient (r) ranges from -1 to +1. The value of coefficient of correlation (r) indicates both the strength and direction of the relationship. If $r = -1$ there is perfectly negative correlation between the variables. If $r = 0$ there is no relationship between the variables, and if $r = +1$ there is perfectly positive relationship between the variables. For values of r between +1 and 0 or between 0 and -1, the different scholars have proposed different interpretations with slight difference. (Geoffrey *et.al*, 2005).

There are various correlation analysis tools used to describe the presence of correlation among variables. The major tools used are Pearson product-moment correlation, Spearman rank-order (r_s), *Phi* (ϕ), and *Gamma* (γ). Pearson product-moment correlation was selected to show the association of variables in this study. Depending on the objective of this study correlation analysis was aimed to investigate the association of the independent variables (LIQ, AQ, CAP, OE, MC, I) with the dependent variable (ROA AND ROE). The Pearson’s Product Correlation Coefficient was computed to determine the relationships between SIX determinant factors (LIQ, AQ, CAP, OE, MC, I) with dependent variable (ROA AND ROE).

Table 4 Magnitude of Correlation strength

Correlation Coefficient(r)	Strength of Correlation
0.01 up to 0.09	Negligible association
0.10 up to 0.29	Low association
0.30 up to 0.49	Moderate association
0.50 upto0.69	Substantial association
0.70 and above	Very strong association

Source: Joy *et.al*, (2011).

The interpretation of the analysis of the Pearson correlation analysis is based on the method of Joy *et.al*, (2011). Table 4.2 shows the strength in the magnitude of relationship for correlation of variables that this study used to interpret correlation coefficient results.

Table 5 : Pearson correlation Matrix of Dependent and Independent Variables

The following table indicates that the correlation matrix among variables under study viewing the relation of independent variables with the dependent variables.

		RO A	ROE	LIQ	CA	AQ	OE	MC	I
R O A	Pearson Correlation	1							
R O E	Pearson Correlation	.713 **	1						
L I Q	Pearson Correlation	.304 **	.300* *	1					
C A	Pearson Correlation	.346 **	-. .357* *	.066	1				
A Q	Pearson Correlation	.345 **	.348* *	.599**	-.018	1			
O E	Pearson Correlation	-. .769 **	-. .725* *	-.347**	-.097	-. .453**	1		
M C	Pearson Correlation	.356 **	.482* *	-.078	-.147	.139	-. .429**	1	
I	Pearson Correlation	.177	.263* *	.341**	-.059	.323**	-. .318**	-.009	1

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

Source: Financial statements of banks, NBE reports, computation on SPSS.

According to the above table, all explanatory variable have significantly correlated with dependent variable ROA except Inflation and it also indicates that except for Operational Efficiency the rest explanatory variables have **positive** correlation regarding to the dependent variable ROA and for another dependent variable ROE except operational efficiency and capitalization all explanatory variables have a positive correlation and all variable have significantly correlated with dependent variable ROE. It is clearly indicated that Market Concentration (MC) is the most **positively** correlated variable with ROA as well ROE, viewing that increase in bank share of total loan of banks results an increase in ROA and ROE as the same time. This is also true for Liquidity, Asset quality, capitalization, and inflation regarding to the dependent variables ROA & also true for ROE except capitalization which has perfectly negative correlated relating to ROE even though inflation has insignificant correlation related to ROA. On the other hand, Operation Efficiency is having perfectly negative correlation in relation to ROA and ROE, indicating that an increase in cost to income ratio results a decrease in ROA and ROE. And the coefficient correlation is significant. This implies that as operation efficiency related expense per gross income increases ROA and ROE of banks decreases. More over Capitalization is having perfectly negative correlation in relation to ROE, indicating that an increase in a total equity per total asset results a decrease in ROE it implies that an increase on total equity related expenses per total asset results on a decrease of ROE of banks.

Correlation Analysis between liquidity risk and Return on Asset as well for Return on equity

Hypothesis: 1

- H1: liquidity risk of a bank affects positively/negatively the bank's profitability.
- H0: liquidity risk of a bank affects positively the bank's profitability..

The result portrayed on Table 4.3 shows that the existing Liquidity risk ($r = .304$, $N=80$, $p < 0.01$) and ($r = .300$, $N=80$, $p < 0.01$) has moderate positive association and is statistical significant. This means an increase in Liquid asset per total asset is associated with ROA and ROE respectively. Therefore, the null hypothesis (H0) is accepted.

Correlation Analysis between Market concentration and return on asset as well Equity

Hypothesis: 2

- H2: market concentration affects positively/negatively financial performance of the banks.

- H0: There is no significant positive relationship between the market concentration of the banking sector and financial performance of the banks

The result presented on Table 4.3 shows that market concentration ($r = .356$, $N=80$, $p < 0.01$) and ($r = .482$, $N=80$, $p < 0.01$) have Moderate positive relation and is statistical perfectly significant correlated with ROA and ROE respectively. This means market concentration is associated with ROA as well as ROE. Therefore, the null hypothesis (H0) is rejected.

Correlation Analysis between Inflation and ROA as well ROE

Hypothesis: 3

- H3: Inflation affects positively/negatively banks profitability.
- H0: There is no significant negative relationship between inflation and bank profitability.

The result on table 4.3 indicates that Inflation ($r = .177$, $N=80$, $p < 0.01$) and ($r = .263$, $N=80$, $p < 0.05$) has very strong positive relation and is statistical insignificantly correlated with ROA and has low association and statistically significantly correlated with ROE respectively. This means inflation is associated with ROA AND ROE even if the relation is insignificant to that of ROA. Therefore, the null hypothesis (H0) is accepted

Correlation Analysis between Capital Adequacy and ROA as well ROE

Hypothesis: 4

- H4: capital adequacy affects positively/negatively financial performance of the banks.
- H0: There is no positive relationship between capital adequacy and financial performance of the banks.

The result on the above Table 4.3 shows that the capital adequacy ($r = .346$, $N=80$, $p < 0.01$) has moderate positive relation and is statistical significantly correlated with ROA. Therefore, the null hypothesis (H0) is rejected. Whereas capital adequacy ($r = -.357$, $N=80$, $p < 0.01$) shows that there is substantial negative relation and is statistical significantly correlated with ROE. So that the null hypothesis (H0) is accepted.

Correlation Analysis between Asset Quality and ROA as well ROE

Hypothesis: 5

- H5: quality of assets affects positively/negatively financial performance of the banks.

- H0: There is no significant negative relationship between the quality of the assets of a bank and financial performance of the banks

The result on Table 4.3 displays that the existing Asset Quality ($r = .345$, $N=80$, $p < 0.01$) and ($r = .348$, $N=80$, $p < 0.01$) is having moderate positive relation and is statistically significantly correlated with ROA and ROE respectively. Therefore, the null hypothesis (H0) is accepted for both dependent variable.

Correlation Analysis between Operational Efficiency and ROA as well ROE

Hypothesis: 6

- H6: operational efficiency affects positively/negatively financial performance of the banks
- H0: There is no significant negative relationship between the operational efficiency of a bank and financial performance of the banks.

The result on Table 4.3 displays that the existing Operational Efficiency ($r = -.769$, $N=80$, $p < 0.01$) and ($r = -.725$, $N=80$, $p < 0.01$) having very strong negative relation and statistically described as perfectly correlated with ROA and ROE respectively. So that, the null hypothesis (H0) rejected.

In general, the correlation coefficients of the all six independent variables dimensions had showed a positive and negative significant as well as insignificant correlation with strength of low to very strong association with ROA and ROE. According to Donald *et.al*, (2010) correlation values do not assure causation, but it could be used to predict the other variable.

4.1.1. Test of Classical Linear Regression Assumptions

The following sections discuss results of the diagnostic tests and there are five basic Classical Linear Regression Model (CLRM) assumptions needs to be encounter (i.e., heteroscedasticity, autocorrelation, multicollinearity, normality and model specification test) that ensure whether the data fits the basic assumptions of classical linear regression model or not.

- **Test for Average Value of the Error Term is Zero ($E(u_t) = 0$)**

This assumption indicated that the average value of errors is zero. If a constant term is included in the regression equation, this assumption will never be disrupted. Therefore, since the constant term which is β was included in the regression equation, the average value of the error term in this study is expected to be zero.

- **Test of Heteroscedastiy ($\text{var}(ut) = \sigma^2 < \infty$)**

This assumption assumes that when the errors is different and varying depending on the value of one or more of the independent variables, the error terms are heteroskedastic (Rahel, 2014). Heteroscedasticity test is very important because if the model consists of heteroscedasticity problem, the OLS estimators are no longer BEST and error variances are incorrect, therefore the hypothesis testing, standard error and confident level will be invalid. A white' test has been made, to ensure that this assumption is no longer violated.

- **Test of Multicollinearity**

This assumption of CLRM is on which the relationship between independent variables should not be highly correlated. Or dependent variables should not be related to one another.

Perfect multicollinearity occurs when there is an exact relationship between two or more variables. In this case, it is not possible to estimate all of the coefficients in the model. The simplest way to test multicollinearity is by seeing the correlation matrix of explanatory variables, the following table presents correlation of variables under the study.

Table 6 : Correlation Matrix of Explanatory Variables (Multicollinearity Test) for ROA

Model		Coefficients ^a					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	.035	.005		6.790	.000		
	I	-.003	.007	-.036	-.483	.630	.784	1.275
	LIQ	.004	.004	.070	.938	.351	.775	1.291
	CA	.074	.019	.277	3.981	.000	.898	1.113
	AQ	.014	.016	.060	.841	.403	.865	1.155
	OE	-.054	.007	-.698	-8.062	.000	.581	1.721
	MC	.012	.009	.106	1.358	.179	.710	1.409

a. Dependent Variable: ROA

Form the above table in this study all the correlation coefficients which shows that there is no multicollinearity problem.

Table 7 : Correlation Matrix of Explanatory Variables (Multicollinearity Test) for ROE

Model		Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.456	.038		11.903	.000		
	I	-.001	.054	-.001	-.014	.989	.784	1.275
	LIQ	.052	.033	.108	1.564	.122	.775	1.291
	CA	-.914	.140	-.417	-6.514	.000	.898	1.113
	AQ	.081	.124	.043	.654	.515	.865	1.155
	OE	-.431	.050	-.678	-8.529	.000	.581	1.721
	MC	.128	.065	.141	1.956	.054	.710	1.409

a. Dependent Variable: ROE

Source: *Financial statements of banks, NBE reports, computation on SPSS.*

Form the above table In this study all the correlation coefficients which shows that there is no multicollinearity problem.

- **Test of Normality ($ut \sim N(0, \sigma^2)$)**

Normality test is used to determine whether the error term is normally distributed. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level.

Table 8: Residual statistics for ROA

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.005007757	.035561092	.025465095	.0063117048	80
Residual	-.0068446803	.0168619975	0E-10	.0043133902	80
Std. Predicted Value	-3.241	1.600	.000	1.000	80
Std. Residual	-1.525	3.758	.000	.961	80

a. Dependent Variable: ROA

Figure 2 Histogram for ROA

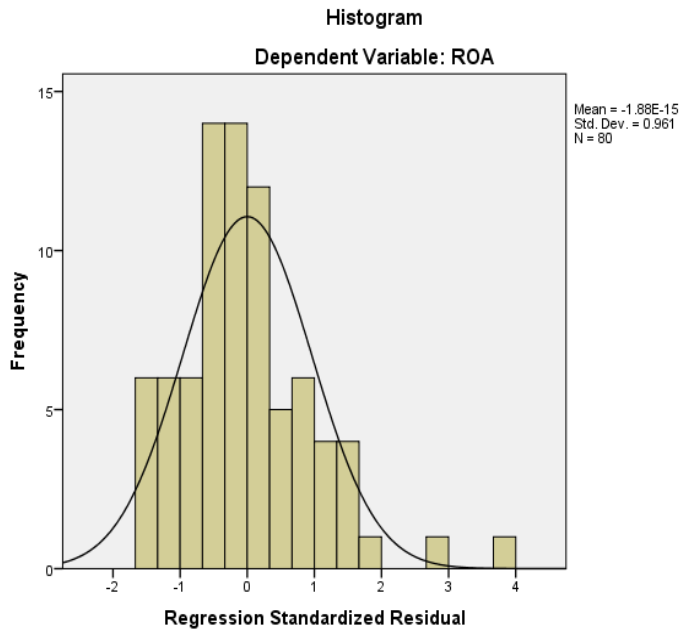
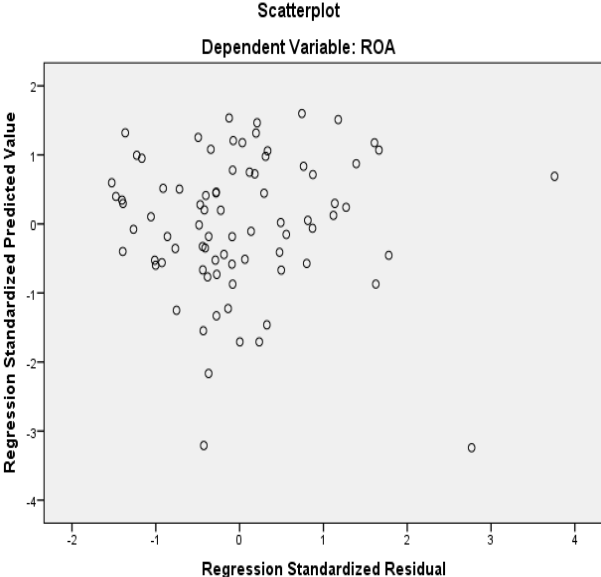
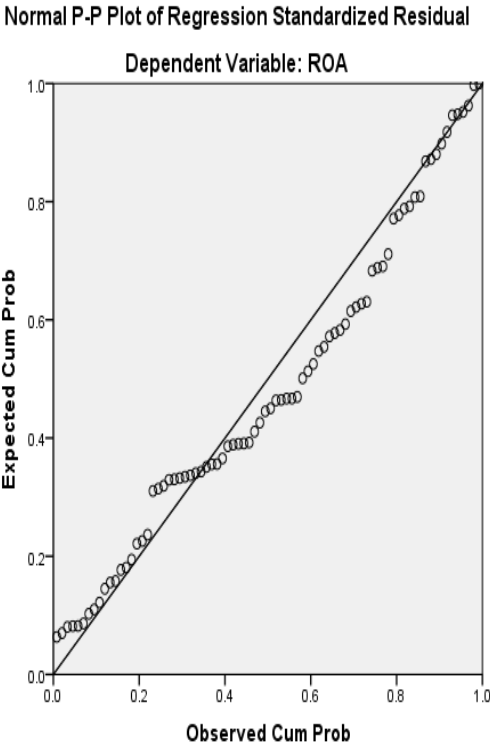


Figure 3 : Normal Plot and Scattered plot for ROA



➤ **Table 9 Residual statistics for ROE**

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.053051617	.319456607	.201692452	.0536267580	80
Residual	-.0529671796	.1130190790	0E-10	.0324859493	80
Std. Predicted Value	-2.772	2.196	.000	1.000	80
Std. Residual	-1.567	3.344	.000	.961	80

a. Dependent Variable: ROE

Figure 4 Histogram for ROE

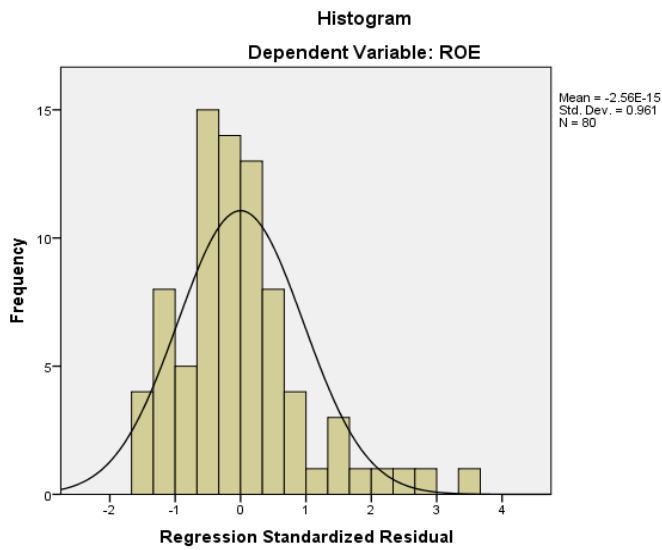
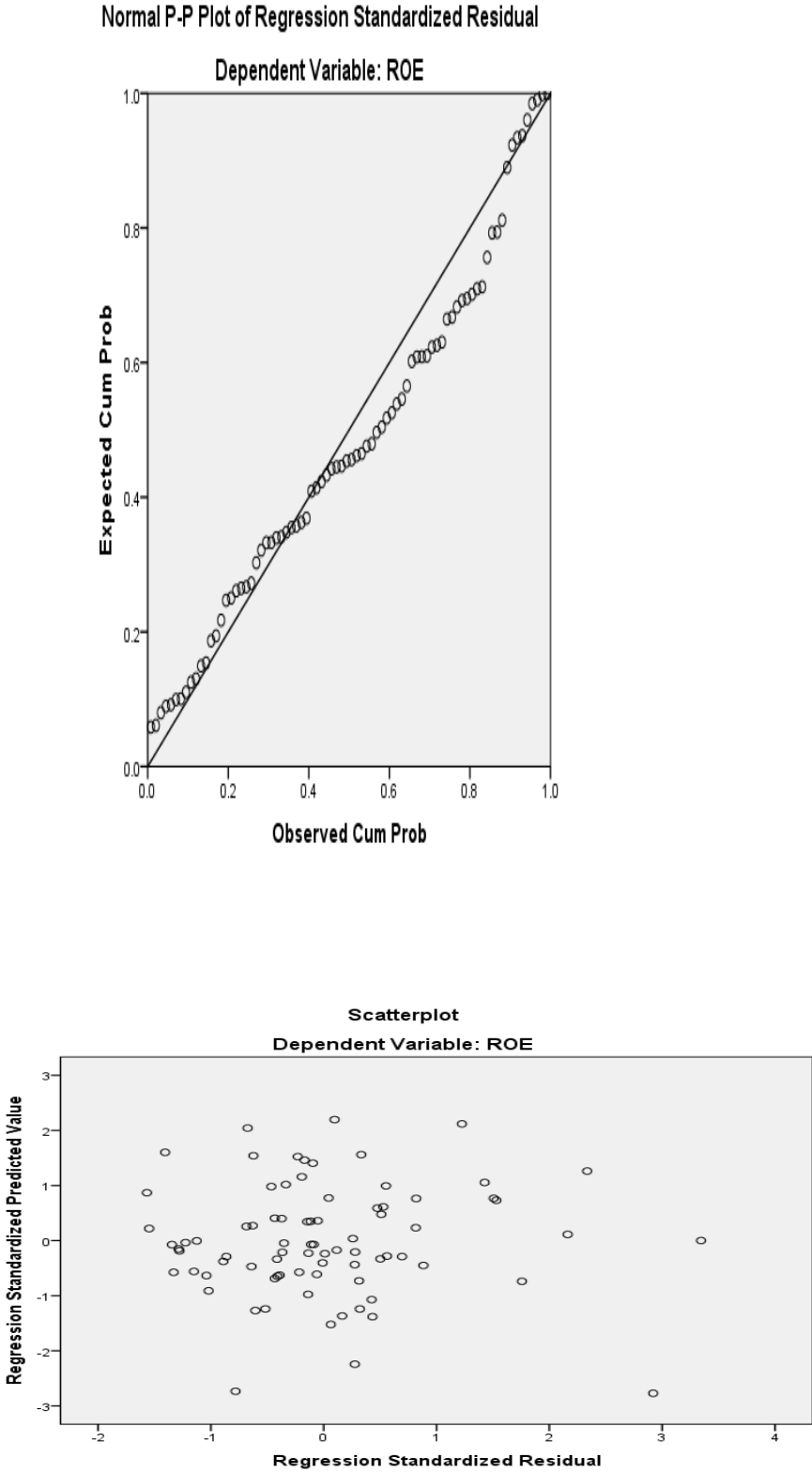


Figure 5: Normal Plot and Scattered plot for ROE



4.1 Regression Analysis

Regression analysis used to test the magnitude of the effect of predictor variables on dependent variable. Data analysis procedures appropriate for interval data are the Pearson's r , t -test, ANOVA, and regression procedures (Harry and Deborah, 2012).

4.2.1 Multiple Linear Regression Analysis

Regression analysis is a systematic method that can be used to investigate the effect of one or more predictor variables on dependent variable. It allows making statements about how well one or more independent variables will predict the value of a dependent variable. Multiple regression was conducted in order to investigate the effect of overall predictor variable on profitability.

H1: Liquidity dimensions as a bundle has an effect on ROA and ROE.

H0: Liquidity dimensions as a bundle has no effect on ROA and ROE.

Table 10 : Multiple Linear Regression Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.824 _a	.679	.652	.0045087494

a. Predictors: (Constant), I, MC, CA, AQ, LIQ, OE

b. Dependent Variable: ROA

As shown in Table 4.16 the overall bundle of determinant factors of the six independent variables Liquidity, Capital adequacy, Asset quality, Operational Efficiency, market concentration and Inflation explains 67.9 % ($R^2 = 0.679$) of the dependent variable (Return on Asset). This suggests that 67.9% of Return on asset of banks clearly depends on the independent variables while the remaining 32.1 % is determined by other excluded factors in this study.

Table 11 ANOVA Multiple Linear Regression

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.003	6	.001	25.686	.000 ^b
	Residual	.001	73	.000		
	Total	.005	79			

a. Dependent Variable: ROA

b. Predictors: (Constant), I, MC, CA, AQ, LIQ, OE

The result of ANOVA table (Table 4.17) shows that $F = 25.686$ which is greater than 1 and $P < 0.01$ we can conclude that the combination of Liquidity factors as a bundle have positive effect on profitability, which is statistically significant and confident at 99%. Thus, this study rejects the null hypothesis that Liquidity dimensions as a bundle has no effect on ROA.

Table 12 : Multiple Regression Coefficient

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.034	.005		6.682	.000
	LIQ	.004	.005	.074	.844	.041
	CA	.077	.018	.288	4.169	.000
	AQ	-.002	.048	-.004	-.049	.051
	OE	-.053	.007	-.686	-7.806	.000
	MC	.012	.009	.110	1.392	.054
	I	-.005	.007	-.048	-.644	.522

a. Dependent Variable: ROA

The relative contribution of each of the different independent variables (LIQ, CA, AQ, OE, MC, I) can be compared by taking the beta value under the unstandardized coefficients. The higher the beta value, the strongest its contribution becomes. Accordingly, Capital Adequacy (Beta=.077) makes the strongest unique contribution to explaining the dependent variable (ROA) in which the results shown that, a one unit increase or positive change in "capital adequacy" would lead to a 0.077 unit increase in the level of ROA and followed by Market Concentration (B=.012), and Liquidity (B=.004). On the other hand, the contribution of Asset Quality, Operational Efficiency and inflation to the dependent variable ROA was inverse proportion as shown from their respective beta values. It indicate that a one unit increase in AQ, OE and I will result to 0.02, 0.053 and 0.005 unit decrease in the level of ROA respectively

Looking to the statistical significance of each of the independent variables from the coefficients table, LIQ (Sig. = .041), AQ (Sig. = .051), and MC (Sig. = .054), have a statistically significant contribution at (Sig<.05) for the prediction of the dependent variable, ROA. On the other hand, Capital Adequacy (Sig. = .000) and Operational Efficiency (Sig. = .000) statistically significant contribution at (Sig<.01) for the prediction of the dependent variable, ROA. On the contrary, Inflation (Sig. = .522) was found to be statistically non-significant indicating its lower contribution to make any significant prediction.

H1: Liquidity dimensions as a bundle has an effect on ROE.

H0: Liquidity dimensions as a bundle has no effect on ROE.

Table 13 Multiple Linear Regression Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855 ^a	.732	.709	.0337946286

a. Predictors: (Constant), I, MC, CA, AQ, LIQ, OE

b. Dependent Variable: ROE

As shown in Table 4.19 the overall bundle of determinant factors of the six independent variables Liquidity, Capital adequacy, Asset quality, Operational Efficiency, market concentration and Inflation explains 73.2 % (R2 = 0.732) of the dependent variable (Return on Equity). This suggests that 73.2%

of Return on equity of banks clearly depends on the independent variables while the remaining 26.8 % is determined by other excluded factors in this study

Table 14: ANOVA Multiple Linear Regression

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.227	6	.038	33.155	.000 ^b
	Residual	.083	73	.001		
	Total	.311	79			

a. Dependent Variable: ROE

b. Predictors: (Constant), I, MC, CA, AQ, LIQ, OE

The result of ANOVA table (Table 4.20) shows that $F = 33.155$ which is greater than 1 and $P < 0.01$ we can conclude that the combination of Liquidity factors as a bundle have positive effect on profitability, which is statistically significant and confident at 99%. Thus, this study rejects the null hypothesis that Liquidity dimensions as a bundle has no effect on ROE.

Table 15 Multiple Regression Coefficient

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.456	.038		11.903	.000
	LIQ	.052	.033	.108	1.564	.022
	CA	-.914	.140	-.417	-6.514	.000
	AQ	.081	.124	.515	.654	.043
	OE	-.431	.050	-.678	-8.529	.000
	MC	.128	.065	.141	1.956	.054
	I	-.001	.054	-.001	-.014	.989

a. Dependent Variable: ROE

The relative contribution of each of the different independent variables (LIQ, CA, AQ, OE, MC, I) can be compared by taking the beta value under the unstandardized coefficients. The higher the beta value, the strongest its contribution becomes. Accordingly, market concentration (Beta=.128) makes the strongest unique contribution to explaining the dependent variable (ROE) in which the results shown that, a one unit increase or positive change on "Market concentration" would lead to a 0.128 unit increase in the level of ROE and followed by asset quality (B=.081), and Liquidity (B=.052). On the other hand, the contribution of capital adequacy and Operational Efficiency and inflation to the dependent variable ROE was inverse proportion as shown from their respective beta values. It indicate that a one unit increase in capital adequacy, operational efficiency and inflation will result to 0.914, 0.431 and 0.001 unit decrease in the level of ROE respectively .

Looking to the statistical significance of each of the independent variables from the coefficients table, LIQ (Sig. = .022), AQ (Sig. = .043), and MC (Sig. = .054), have a statistically significant contribution at (Sig<.05) for the prediction of the dependent variable, ROE. On the other hand, Capital Adequacy (Sig. = .000) and Operational Efficiency (Sig. = .000) statistically significant contribution at (Sig<.01) for the prediction of the dependent variable, ROE. On the contrary, Inflation (Sig. = .989) was found to be statistically non-significant indicating its lower contribution to make any significant prediction.

4.6.3 Regression Mathematical Model

The equation of multiple regressions on this study is generally built on around two sets of variables, namely dependent variables (ROA and ROE) and independent variables (liquidity, capital adequacy, asset quality, Operational Efficiency, Market concentration and inflation). The basic objective of using regression equation on this study is to make more effective description, understanding, prediction, and controlling the stated variables.

Return on Asset = f (Liquidity, Capital Adequacy, Asset Quality, Operational Efficiency, Market Conc. and Inflation)

Return on Equity = f (Liquidity, Capital Adequacy, Asset Quality, Operational Efficiency, Market Conc. and Inflation)

Where:-ROA= Return on Asset

ROE= Return on Equity

LIQ= Liquidity

CA=Capital Adequacy

AQ= Asset Quality

OE= Operational Efficiency

MC=Market Concentration

I= Inflation

Mathematically, $Y_i = \beta_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$

Where Y is the dependent variable- ROA & ROE Whereas X2, X3, X4, X5, and X6 are the independent β_1 is the intercept term- it gives the mean or average effect on Y of all the variables excluded from the equation, although its mechanical interpretation is the average value of Y when the stated independent variables are set equal to zero. $\beta_2, \beta_3, \beta_4, \beta_5,$ and β_6 refer to the coefficient of their respective independent variable which measures the change in the mean value of Y, per unit change in their respective independent variables. Therefore, based on the result in the regression coefficient the general mathematical equation of the estimated regression model in this study for return on asset and return on equity is presented below.

ROA= $\beta + \beta_1 \text{ Log (LIQ) } + \beta_2 \text{ Log (CA) } + \beta_3 \text{ (AQ) } + \beta_4 \text{ (OE) } + \beta_5 \text{ Log (MC) } + \beta_6 \text{ Log (IN) } + \mu \dots \dots \dots 6$

ROE= $\beta + \beta_1 \text{ Log (LIQ) } + \beta_2 \text{ Log (CA) } + \beta_3 \text{ (AQ) } + \beta_4 \text{ (OE) } + \beta_5 \text{ Log (MC) } + \beta_6 \text{ Log (IN) } + \mu \dots \dots \dots 6$

That is the regression model in this study have

ROA= $0.034 + 0.004(\text{LIQ}) + .077 (\text{CA}) - .002(\text{AQ}) - .053 (\text{OE}) + .012 (\text{MC}) + \mu \dots \dots \dots 5$

ROE= $.456 + .052(\text{LIQ}) - .914 (\text{CA}) + .081(\text{AQ}) - .431 (\text{OE}) + .128 (\text{MC}) + \mu \dots \dots \dots 5$

Table 16 : Summary of Hypothesis testing on Dependent variable of ROA

No.	Developed Hypothesis	Test Result
1	H1: There is a significant positive/negative effect between the liquidity risk of a bank and the bank's profitability	Accept
2	H2: There is a significant positive/negative effect between the market concentration of the banking sector and financial performance of the banks.	Accept
3	H3: There is a significant positive/negative effect between inflation and bank profitability.	Reject
4	H4: There is positive/negative effect between capital adequacy and financial performance of the banks.	Accept
5	H5: There is a significant positive/negative effect between the quality of the assets of a bank and financial performance of the banks.	Accept
6	H6: There is a significant positive/negative effect between the operational efficiency of a bank and financial performance of the banks.	Accept

Considering regression analysis this study displayed that the from six Liquidity dimensions five variables (Liquidity ratio, capital Adequacy, asset quality, Operational efficiency, market concentration) has a strong positive impact on Return on asset, while Inflation Liquidity dimension was not exerting unique impact on the Return on asset.

Table 17 : Summary of Hypothesis testing on Dependent variable of ROE

No.	Developed Hypothesis	Test Result
1	H1: There is a significant positive/negative effect between the liquidity risk of a bank and the bank's profitability	Accept
2	H2: There is a significant positive/negative effect between the market concentration of the banking sector and financial performance of the banks.	Accept
3	H3: There is a significant positive/negative effect between inflation and bank profitability.	Reject

4	H4: There is positive/negative effect between capital adequacy and financial performance of the banks.	Accept
5	H5: There is a significant positive/negative effect between the quality of the assets of a bank and financial performance of the banks.	Accept
6	H6: There is a significant positive/negative effect between the operational efficiency of a bank and financial performance of the banks.	Accept

Considering regression analysis this study displayed that the from six Liquidity dimensions three variables (Liquidity ratio, Operational efficiency, market concentration) has a strong positive impact on Return on asset, while capital Adequacy And asset quality are Liquidity dimension which have a significant effect with a strong negative impact on Return on equity whereas inflation has insignificant impact and was not exerting unique impact on the Return on Equity.

4.1.1. Liquidity indicators and profitability Testing supported by scholars

The main intention of the study is to value the correlation between banks Liquidity and its effect on the profitability of privet commercial banks. To achieve this objective, the researcher used quantitative research approaches. The subsequent section presented brief analysis of Liquidity determinant variables result on regression analysis and its effect on the performance of commercial banks by supporting it with empirical evidence from former studies.

The coefficient of LIQ is 0.004, implying positive relation between Liquidity and performance of banks. But looking at the p value positive impact of Liquidity is not significant.

Abera (2012) and focused on investigating specific factors in the industry that had a direct effect on the profitability of Ethiopian commercial banks. The regression analysis showed that liquidity had little impact on the profitability of banks. The regression analysis and extensive interview by the above researcher showed that the association between the two variables was positive.

On other study done by Tsige (2017) on the effects of liquidity on commercial banks of Ethiopia covered from years 2005-2015. The overall result obtained from the regression model used in her research indicates that liquidity indicator that is Liquidity ratio results in lower significant level of profitability for commercial Banks in Ethiopia.

There was study done in Ghana to determine the factors that impacted the performance of Naara Banks by Hadad (2013). The aim of the research was to determine the relationship between financial

performances of Naara banks and its Liquidity, credit portfolio, total assets. The study results indicated a positive association between the two variable.

There is another research by Bordeleau and Graham (2010) in their study found that the impact on profitability of a bank's holdings of liquid assets (i.e., reserves) depends on the amount of funding that comes due in the short-term and on the general state of the economic cycle. All else equal, if a bank is more reliant on short-term funding, it may need to hold more liquid assets in order to maximize profits and continue its operation.

Alashatti, (2015) concentrated on the effect of liquidity on Jordanian commercial banks profitability from 2012 to 2015. Found the positive effect of quick and investment ration on the profitability while negative effect of capital and liquid ratio on profitability of Jordan banks.

Nyaga, (2014) studied the effect of liquidity on the profitability of the Ukrainian companies by taking data from 2001-2010. By employing regression analysis and the conclusion indicates that rapid and current distributions have positive significant result on profitability.

Furthermore, Ibe, (2013) explored the effect of liquidity and profitability of Nigerian banks. Regression has been in study and three banks were randomly selected as a sample size. The outcomes express that liquidity is big issue for Nigerian banking industry.

Table 18: Summary of Actual and Expected Signs of Explanatory Variables on the Dependent Variables ROA & ROE

Variable	Expected effect on ROA & ROE	Actual effect on ROA	Actual effect on ROE
LIQ	-ve/Sig	+ve/Sig	+ve/Sig
CA	+ve/Sig	+ve/Sig	-ve/Sig
AQ	-ve/Sig	-ve/Sig	+ve/Sig
OE	+ve/Sig	-ve/Sig	-ve/Sig
MC	-ve/Sig	+ve/Sig	+ve/Sig
IN	-ve /Sig	-ve/Sig	-ve/Sig

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

In this particular chapter three sections are discovered. The first section of this chapter is about summary of findings, followed by this the conclusion part is presented and finally the recommendation section is discovered.

5.1. Summary of Finding

In this study the researcher tries to examine the effects of Liquidity on the profitability of Ethiopian commercial banks from time span covered for ten years starting from the fiscal year 2010 to 2019 using panel data from eight private commercial banks. The researcher uses quantitative method of research so as to address both specific and general objectives of the study. The following section tries to summarize results which are obtained from the analysis used on quantitative method of the study.

On the review of theoretical, conceptual and empirical related literature of the study, the five Liquidity indicators have a significant impact on profitability of the bank.

In conducting this study, the required data is obtained through secondary data that is from NBE records and financial statements of each bank. The profitability was measured using the six liquidity indicators (Liquidity, Capital Adequacy, and Asset Quality, Operational efficiency, Market concentration and Inflation) in the analysis part descriptive statistics, correlation analysis and regression analysis was performed.

The descriptive finding of the study shows that all the six indicators of Liquidity have a **positive relation with indicators of profitability** (ROA & ROE) whereas Asset quality has the lowest mean value (0.02). Operational Efficiency has the highest mean value among the other dimension (Mean= 0.39). Regarding profitability in relation to ROA & ROE level, the mean values are .025 & .201. The association of Liquidity indicators with Profitability was measured by Pearson correlation coefficient which was found significant and positive in all cases except inflation which was positive but insignificant correlated to ROA but significant and inversely correlated to ROE and operational efficiency was significant and inversely correlated to both ROE and ROA whereas Capital adequacy

was significant but negatively correlated to that of ROE. The regression analysis has indicated that all the Liquidity indicators Liquidity, Capital Adequacy, Asset Quality and Operational Efficiency had unique influence and predicting power over profitability of commercial banks. On the other hand,

Inflation one of liquidity indicators didn't show unique influence and impact over profitability of the banks particularly on profitability indicator of ROA as well as ROE

5.2 Conclusion

This study involves an attempt to provide important findings to bank Managers as they develop their own business strategies. Majority of Bank managers have Trouble about maintaining optimal liquidity level so as to provide the necessary service whenever needed even in the unforeseen situation since they are engage business in dynamic environment. This research study provides important information about the perceptions of banks performance that can enable managers to maintain optimal liquidity level by manipulating the weak links of liquidity indicators and attain improved profitability.

The findings of the study confirm that there is a significant relationship between liquidity indicators and profitability. Ultimately, maintaining liquidity with an optimal level will lead to a higher profitability. Liquidity indicators which have showed lower mean perception specially Asset quality are the menace for achieving the optimal level so as to serve their customers as well as to retain themselves competitively in the current market even in unforeseen situation like in the current case COVID 19.

All these indicators of liquidity should have been given due attention since all of them except inflation reports high impact on profitability of commercial banks. It is therefore, concluded that, giving special attention to all indicators of liquidity is mandatory for the success, profitability and continuous existence of commercial banks in the market.

5.3 Recommendations

On the basis of the above findings and conclusions, the following recommendations are forwarded. The explanatory powers of bank-specific as well as industry specific variables are far more important in explaining the variability in ROA and ROE for commercial banks in Ethiopia than macro-economic variables (in our case inflation).

Liquidity ratio

It is the key indicators of liquidity that have a very significant influence on profitability of commercial banks. So Banks should focus on this dimension to keep its optimal level in order to raise the level of service quality and creditor/supplier satisfaction as well as for survival of the bank in the current market. Commercial banks are forced to hold portion of their deposit balance in the form of liquid assets thereby to meet instant withdrawal requests from customers and avoid distressful

situation. So, liquidity management is an on-going process and concerned with management of the trade of between holding excess liquid assets versus profitability. In view of this, banks shall remain profitable through optimal utilization of their liquid assets even during some unforeseen instances like the current pandemic situations. Thus, the following major activities are recommended to be considered by banks in their daily liquidity management endeavors so that their ROA and ROE will not be compromised:

- Deployment of improved liquidity management practices which shall be achieved through synergized effort of all the back office and front office business segments.
- Instill proper check and balance in the daily liquidity management task and ensure the existence of proper structure,
- Assign responsible organs and aggressively engaged in resource mobilization activities
- Avoid holding of any excess fund through active participation in short term investments like T-bills and placement of fixed time deposits at other peer banks with no adverse impact on liquidity position
- Prioritize loan disbursements to short term working capital loans having pre-established periodic repayment schedules,
- While observing liquidity stressful signals, defer project financing and long term loan applications,
- Consider any unfavorable situation as part of cash outflow decision,
- Implement proper bi-weekly, monthly and quarter cash flow forecasts and loanable fund analysis,
- Defer the purchase of fixed assets including budgeted items,
- Avoid purchase of fixed assets using depositors fund, rather approach shareholders to raise additional fund using the principle of rights issue,

Operational Efficiency

It is also one of the key dimensions of liquidity that have a very significant influence on profitability and which inversely proportionate to profit and it is used to measure how banks efficiently utilize their assets to generate income at lower cost (cost-to-income ratio). This key drivers of profitability used to describe the capability of management that shows how sound mechanism they applied so as to control costs and it is always anticipated to have an inverse association with profits. Since strong management of these expenses will increase efficiency and used to boom profits. So that management should give due attention on minimizing as well as

controlling cost so as to maximizing their own profit even in dynamic environment. In general, optimum efficiency shall be achieved through:

- Efficient utilization of human and material resources
- Reducing balance of non-earning assets by all means
- Further support operations through system and try to avoid manual interventions,
- Improve staff productivity, commitment and belongingness
- Monitor controllable expenses
- Revenue generation might be challenging during the current pandemic, so banks have to avoid unnecessary expenses.

Asset quality

It is another important key liquidity indicator of commercial banks shows that the level of loans in relation to the total asset of the banks. So that management should give care on handling of loans in associated to that of total asset of the bank to not having a higher ratio since the higher the ratio the lesser the quality and therefore the higher the risk of the loan portfolio will be exist. This means since high asset quality ratio implies that the asset of the bank is highly dominated by loans so that this can affect loan default performance of banks. So that bank managements carefully plan their level of loan in concerning to the availability of total asset.

In short loans and advances represent major portion of the bank's assets in the balance sheet. Asset quality is on the other hand is a measure of healthiness of the balance of outstanding loans and advances. It is used to measure credit risk of the bank and ability of the bank to process loan application prudently. So, asset quality now becomes increasingly inevitable to ensure profitability of banks in general. Accumulation of significant loan stock under special mention, substandard and doubtful accounts on the other hand is not good sign for the overall performance of the banking sector as it might erode ROA and ROE in the form of periodic provisions. Thus, in order to ensure better asset quality including during unforeseen situations, banks shall further engage and undertake the following major activities:

- Implement clear and transparent credit policies and procedures
- Proactively follow the economic environment to timely identify declining sectors
- Train staffs sufficiently and process loan request by merit
- Further strengthen the relationship with credit customers

- Take early proactive measures while noticing unfavorable instances on customers' business and behavior.
- Check the collateral position which shall serve as the last line of defense
- During the current pandemic, credit management task shall be challenging, so banks have to further strengthen their follow-up task thereby to avoid non-performing loan balances,

Capital Adequacy

It is also another important liquidity indicator that examines the leverage structure of a bank by using the equity-to-total asset ratio. This ratio measures the ability of banks to protect uncertain events that may arise due liquidity stress and credit risk is calculated by dividing its primary and total capital against the Bank's risk-weighted assets. As it is used to absorb any unfavorable situations, banks are expected to maintain adequate level of capital. To this end, any loan balance growth and fixed asset investment should be supported with proportional amount of own capital. Accordingly, banks shall consider capital growth periodically to ensure their long term survival by winning the stiff competition among peers. So, maintaining adequate level of capital adequacy ratio is critical for banks in the form:

- Shall protect banks from easily disrupting when there is some shocks in the industry,
- Adequate level of capital shall serve as a source of public confidence which in turn shall increase market share and profitability
- To have improved liquidity position and attain regulatory threshold without fail,
- Used to attract corporate borrowers by reducing the impact of single borrowers limit,
- Used to actively participate in in fixed asset investments,
- Better loan to deposit ratio and shareholders confidence that shall ease the task of additional capital raising, On the other hand, in order to have better capital adequacy ratio, banks can deploy the following strategies:
- Monitor the growth of outstanding loan balances and other off-balance sheet items like guarantees,
- Periodically revise paid-up capital structure of the bank against other balance sheet items,
- Adopt annual profit plough back strategies.

Market concentration

Due to the increasing competition, the cost of mobilizing resources now becomes very challenging. This task shall be further worsened when banks under formation join the market. Moreover, it is also very difficult to meet the increasing demand of influential corporate customers consistently who have greater negotiation power. To this end, single check drawn by this corporate customers shall impact the loanable fund amount and in turn ROA and ROE of banks by large. On the other hand, several banks are under formation and the current stiff competition shall be further intensified one step ahead. So, in view of the above facts, the following activities are recommended as a way forward to avoid the upcoming market concentration risk through:

- Maintain enhanced relationship with corporate customers
 - Ensure the service quality and efficiency across all work units,
 - Identify and capitalize on competitive advantages,
 - Develop own niche market and diversify the customer composition,
 - Mobilize resources from the mass group by expanding the customer base
 - Outreach the potential untapped market by implementing proper customer segmentation
 - Exploit digital banking services like card, mobile and internet banking among others,
 - Identify active economic sectors and follow the trend.
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- To put the whole gorgon in a net shell, maintaining optimal liquidity level of each commercial banks is mandatory so as to survive in the sector. since the current environment is dynamic as well as unpredictable Bank managers should have sound follow up in related to maintaining an optimal level of liquidity to sustain their profitability in the market by progressing asset quality via applying good follow-up on Loans structures, by strength their capital structure through approaching a very good capital adequacy management, creating sound follow up that helps on maximizing their operational efficiency via controlling cost and maintaining the desire profit. Since maintaining the preferred and highest level of liquidity is essential for the existence, survival and success of the banking sector.

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BANK	YEAR	ROA	ROE	LIQ	CA	AQ	OE	MC	I
AIB	2010	0.03116	0.26326961	0.50883033	0.118358	0.047147	0.2634974	0.156719	0.08136941
AIB	2011	0.03565	0.27567173	0.40017665	0.129322	0.036352	0.2296431	0.166541	0.32014789
AIB	2012	0.033043	0.24493317	0.26476219	0.134906	0.027049	0.2657671	0.175929	0.23378582
AIB	2013	0.034159	0.25237377	0.24037042	0.13535	0.023047	0.3184261	0.197918	0.07464022
AIB	2014	0.030856	0.24471064	0.25265374	0.126091	0.022695	0.3211865	0.204262	0.06890012
AIB	2015	0.027036	0.20882223	0.16263308	0.129469	0.01739	0.3480738	0.20458	0.09568899
AIB	2016	0.025119	0.19493088	0.19562272	0.128861	0.015257	0.374023	0.218455	0.06628133
AIB	2017	0.023904	0.21519366	0.16677794	0.111082	0.014606	0.3983072	0.216281	0.10681729
AIB	2018	0.027003	0.30645543	0.21047064	0.088115	0.008151	0.3634731	0.219546	0.13830762
AIB	2019	0.032689	0.34827679	0.15234862	0.093858	0.008611	0.3232248	0.235328	0.15840322
DB	2010	0.026231	0.2884594	0.42541835	0.093366	0.021808	0.2674253	0.251535	0.08136941
DB	2011	0.026231	0.32272583	0.42468154	0.090934	0.01989	0.2550613	0.259747	0.32014789
DB	2012	0.030741	0.35670305	0.3296006	0.095254	0.021473	0.2445061	0.259639	0.23378582
DB	2013	0.037215	0.29661661	0.3069266	0.104332	0.022462	0.2828988	0.227498	0.07464022
DB	2014	0.030728	0.27428296	0.29791262	0.103594	0	0.2863627	0.209899	0.06890012
DB	2015	0.032441	0.24937104	0.22330543	0.118277	0.016822	0.3515209	0.188927	0.09568899
DB	2016	0.029443	0.21652468	0.24043015	0.118071	0.017051	0.3811725	0.179494	0.06628133
DB	2017	0.025442	0.18935893	0.15176237	0.117503	0.020207	0.4433481	0.173234	0.10681729
DB	2018	0.021837	0.15834593	0.15500274	0.115322	0.009794	0.4185411	0.163309	0.13830762
DB	2019	0.02045	0.14850558	0.10832639	0.129148	0.006453	0.4011575	0.162205	0.15840322
BOA	2010	0.022387	0.2401104	0.47169074	0.093238	0.074067	0.3098428	0.157096	0.08136941
BOA	2011	0.02486	0.27381969	0.39790098	0.090789	0.03332	0.3170544	0.138518	0.32014789
BOA	2012	0.026254	0.23860374	0.30622104	0.11003	0.025684	0.3126206	0.124562	0.23378582
BOA	2013	0.021355	0.19529609	0.19460314	0.109348	0.019893	0.3126206	0.120704	0.07464022
BOA	2014	0.039678	0.29262998	0.24353554	0.13559	0	0.2913905	0.112656	0.06890012
BOA	2015	0.021346	0.16113409	0.45899429	0.132471	0	0.3829832	0.096786	0.09568899
BOA	2016	0.021427	0.16972569	0.18443845	0.126243	0	0.4365747	0.113274	0.06628133
BOA	2017	0.02252	0.19633394	0.13580738	0.114702	0	0.4416352	0.133423	0.10681729
BOA	2018	0.017596	0.13256829	0.14043192	0.132734	0.011674	0.4435434	0.126176	0.13830762
BOA	2019	0.019774	0.15695705	0.11381267	0.125982	0.013219	0.4096994	0.118182	0.15840322
WB	2010	0.038897	0.21235704	0.52869297	0.183166	0.039713	0.3043655	0.123249	0.08136941
WB	2011	0.040104	0.24173468	0.51371565	0.165901	0.04542	0.3148769	0.121572	0.32014789

WB	2012	0.040283	0.2096143	0.33434961	0.192177	0.024315	0.2964456	0.11396	0.23378582
WB	2013	0.033031	0.18756146	0.26700214	0.176107	0.022395	0.3425808	0.120397	0.07464022
WB	2014	0.02712	0.14219616	0.15915399	0.190723	0.016698	0.4098666	0.102492	0.06890012
WB	2015	0.025705	0.14597916	0.17844286	0.176086	0	0.4392029	0.099519	0.09568899
WB	2016	0.023202	0.13387291	0.19131775	0.173312	0	0.4644187	0.106129	0.06628133
WB	2017	0.025403	0.15858103	0.186374	0.160187	0	0.4518289	0.098052	0.10681729
WB	2018	0.028971	0.20738376	0.1478175	0.1397	0.017451	0.4163219	0.105534	0.13830762
WB	2019	0.020859	0.14462448	0.14380477	0.144226	0.021604	0.4508786	0.081915	0.15840322
UB	2010	0.029587	0.27362474	0.55539617	0.108129	0.036475	0.3107615	0.001302	0.08136941
UB	2011	0.030008	0.25720131	0.46070753	0.116672	0.027696	0.2587764	0.001369	0.32014789
UB	2012	0.033898	0.27036055	0.32578877	0.125382	0.02331	0.2722874	0.001306	0.23378582
UB	2013	0.021421	0.17794256	0.20666891	0.120383	0.018589	0.389429	0.001209	0.07464022
UB	2014	0.016695	0.12586414	0.28496379	0.132639	0.014409	0.4173626	0.001128	0.06890012
UB	2015	0.019589	0.16683173	0.18964132	0.117419	0.012226	0.4421825	0.001124	0.09568899
UB	2016	0.01963	0.16357923	0.1690058	0.120006	0.013004	0.4297156	0.001207	0.06628133
UB	2017	0.017428	0.15173758	0.1454838	0.114853	0.01237	0.7112596	0.001149	0.10681729
UB	2018	0.019291	0.19420119	0.16149435	0.105377	0.013006	0.3968917	0.001057	0.13830762
UB	2019	0.021376	0.19491967	0.1071666	0.108003	0.005149	0.3834004	0.001082	0.15840322
NIB	2010	0.033647	0.21918787	0.51387194	0.153506	0.039002	0.3262444	0.126849	0.08136941
NIB	2011	0.034653	0.21051105	0.51243194	0.164613	0.041244	0.2941558	0.115576	0.32014789
NIB	2012	0.034587	0.18733272	0.3601731	0.184631	0.027116	0.287113	0.118537	0.23378582
NIB	2013	0.032737	0.17970104	0.24657817	0.182177	0.025022	0.322566	0.11662	0.07464022
NIB	2014	0.027669	0.15138251	0.17827619	0.182777	0	0.3237408	0.120374	0.06890012
NIB	2015	0.025428	0.1548127	0.13561168	0.164249	0	0.386729	0.112993	0.09568899
NIB	2016	0.024623	0.15480221	0.18812193	0.159058	0	0.3821454	0.10621	0.06628133
NIB	2017	0.021095	0.15009952	0.15613516	0.140538	0	0.3775473	0.102614	0.10681729
NIB	2018	0.019291	0.15230501	0.14556553	0.126659	0	0.3820394	0.09467	0.13830762
NIB	2019	0.021376	0.16339782	0.11659107	0.130824	0.009772	0.357254	0.096798	0.15840322
CBO	2010	0.014193	0.13279295	0.48154094	0.106882	0.0253	0.5061404	0.035959	0.08136941
CBO	2011	0.018905	0.19229643	0.48672314	0.09831	0.020028	0.4211835	0.033501	0.32014789
CBO	2012	0.027793	0.24452439	0.33673509	0.11366	0.014434	0.345301	0.044217	0.23378582
CBO	2013	0.03127	0.29378051	0.51965638	0.106441	0.017174	0.3502819	0.05432	0.07464022
CBO	2014	0.046681	0.31471862	0.25130973	0.148327	0	0.3469642	0.081116	0.06890012

CBO	2015	0.027259	0.22144518	0.21260882	0.123094	0	0.49558	0.107617	0.09568899
CBO	2016	0.003291	0.02864502	0.20081203	0.1149	0	0.7522619	0.082735	0.06628133
CBO	2017	0.010132	0.11837586	0.19673452	0.085592	0	0.5906269	0.09273	0.10681729
CBO	2018	0.014695	0.18487672	0.27135217	0.079487	0	0.5191504	0.103176	0.13830762
CBO	2019	0.01574	0.19995841	0.22425748	0.078715	0.034057	0.5146964	0.110335	0.15840322
OIB	2010	0.017187	0.09068011	0.56201221	0.189536	0.011429	0.5422762	0.018383	0.08136941
OIB	2011	0.022663	0.1502086	0.43315203	0.150879	0.01064	0.4171385	0.027645	0.32014789
OIB	2012	0.017764	0.11313262	0.39723447	0.157022	0.01292	0.4743075	0.032587	0.23378582
OIB	2013	0.017111	0.12221672	0.30716729	0.140007	0.014613	0.5342726	0.041617	0.07464022
OIB	2014	0.025013	0.20556726	0.30307335	0.121678	0	0.4374107	0.056353	0.06890012
OIB	2015	0.015826	0.15316348	0.1756569	0.103329	0	0.5126011	0.077141	0.09568899
OIB	2016	0.013755	0.11775762	0.19042046	0.116811	0	0.5579125	0.073037	0.06628133
OIB	2017	0.0177	0.17313108	0.20372743	0.102232	0.018641	0.5264952	0.068742	0.10681729
OIB	2018	0.03058	0.28081073	0.24411455	0.108899	0.007869	0.3997586	0.081928	0.13830762
OIB	2019	0.02347	0.20090282	0.1611404	0.116824	0.015569	0.4311358	0.087071	0.15840322

Annex