College of Business and Economics

Department of Management

The Effect of Bank Regulation on Financial Performance of Private Commercial Banks in Ethiopia

A thesis submitted to the Department of Management, College of Business and Economics, Addis Ababa University, in partial Fulfillment of the Requirements for Master of Science in Management

BY

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Declaration

I, the undersigned, declare that this thesis is my original work produced under the guidance of my Advisor Dr.Mohammed Seid, and has not been published and/or submitted for any award of degree in any other university and that all sources of materials used for the thesis have been dully acknowledged.

Declared by: Elias Hailu

Signature; _____

Date: April**,**2022

Certification

This is to certify that the thesis prepared by Elias Hailu, entitled: *The Effect of Bank regulation on financial Performance of private Commercial banks in Ethiopia:* and submitted in partial fulfillment of the requirements for the Master of Science in Management complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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List of Tables and Figure

Acronyms

NBE	National Bank of Ethiopia
GDP	Gross Domestic product
LOLR	Lender of Last Resort
OECD	Organization for Cooperation and Development
ROE	Return of Equity
RESRE	Reserve Requirement
LIQRE	Liquidity Requirement
ASEQ	Asset Quality
CAPR	Capital Requirement
MKRI	Marketing Risk
MGE	Management Efficiency
CLRM	Classical Regression Model
RE	Random Effect Model
FE	Fixed Effect Model
OLS	Ordinary Least Square
EGLS	Estimated Generalize Least Square
VIF	Variance Inflation Factor

Abstract

This study assesses the effect of bank regulations on Financial-performance of private banks in Ethiopia by employing regulatory variables, Bank-specific variables, and Macroeconomic variables by interpreting the result among financial performance and regulation. Balanced fixed effect panel regression is used for the data of twelve private commercial banks found in Ethiopia in the sample covering the period from 2011 to 2020 for ten consecutive years. The study follows a quantitative research approach, and it is analyzed based on their audited financial statement. The study utilized return on asset (ROA) as a dependent variable and seven independent variables. Those are: reserve requirement, liquidity requirement, asset quality, minimum capital requirement, market risk, management efficiency, and real GDP growth rate.

The outcome of panel data regression analysis showed that capital requirement and management efficiency had a positive and statically significant effect on the financial performance of private commercial banks. The private commercial banksgetbenefited by raising their paid-up capital for expanding the market share, growing competitiveness, financial performance, and absorbing unexpected risks. Reserve requirements had a negative and statically significant effect on the financial performance of private commercial banks. So the result recommended that before applying the regulation, NBE should use sufficient studies and amend the requirement to enhance private commercial banks. Liquidity position determines how well liquid to cover immediate disturbance to the financial health of the bank. Asset quality is a good indicator of financial health. So, it must be kept by the bank's practice, and NBE continue its monitoring to further improve financial resilience and soundness of banks and the banking system.

Key words: Bank, bank regulation, financial performance

CHAPTER ONE

1 Introduction

1.1.Background of the Study

Freixas&Rochet (2008) define the Banking industry contributes an important task in economic development and mobilization of funds from within and outside the country and transferring such funds to various sectors of the economy. Banks also contribute a fundamental role in the allocation of capital in the economy. Banks occupy an intermediary place in the payment and settlement of the country's economy, the business of banking has many attributes, which if not managed appropriately, have the potential to the general financial system and macroeconomic insecurity. The cost of the financial system and macroeconomic instability to the general public and the government is significant; it is essential to ensure the safety, soundness, and stability of the banking system (NBE,2008).

According to Ping (2014),Maintaining economic stability conventionally engages in avoiding high inflation and preventing too much volatility in financial markets. The failure to sustain economic stability can hinder economic growth, discourage investments, and consequently adversely impact the general standard of living.

The Ethiopian financial sector is characterized by improvement from time to time but with a low level of development and is relatively closed to its East African neighbors. When financial systems perform these functions poorly, it hampers economic growth, holds back economic opportunities, and destabilizes economies (Mekonen&Melesse,2014). The banking industry has a closed nature to other competitors outside Ethiopia but, has given opportunities to internal private Banking sectors emergence with rules and regulations.

In Ethiopia, the National Bank of Ethiopia has been issuing various directives and memos for regulation and supervision to ensure the safety, soundness, and stability of the banking system (NBE,2008). For example, the policies try to balance inflation control following money devaluation, by increasing deposit interest; regulate newly emerging banks to join the industry by making the initial capital higher.

The different directives/obliges on banks have various results on the performance of the banking industry positively and negatively; some had unexpected consequences on the banking system. So, the research investigates the effect of bank regulations on bank performance specifically in private banks of Ethiopia. During the period 2011 to 2020, by employing different measures to study various variables.

1.2.Statement of the Problem

Banks play a central important role in the economic development process and stability of the economy. Banks are the main intermediate channels between saving and investment in a country's economy. It affects long-term economic growth through its effect on the efficiency of intermediatory between the savers and final borrowers of funds, affecting thereby the productivity of the capital employed; and through its implications on the volume of saving, which influences the future income-generating capacity of the economy. The government sets various policies in financial sectors to regulate and control stability of the economy. The response of policymakers in these situations are typically an assessment of what went wrong and what regulatory reforms can promote better functioning banking systems.The set of policies to be enforced has a higher impact/risk compared to other institutes because money is a lifeline or blood to other institutes and a catalyst for economic development.

According to Casu, Girardone&Molyneux (2006), Banking regulations have evolved to serve many goals, which changed over time and have even been in disagreement, because of the potential for disagreement among regulatory goals and the effect of the regulation on bank's efficiency. One necessary goal of banking regulation is to define or alleviate crises that might reason systemic fall down of banks and even the economy.

All stakeholders including the National Bank of Ethiopia and Commercial Banks agree on the importance of the banking regulations. Their disagreement comes from the significance of some regulations, implementation, and impact on the performance of the banks. So, it is better to investigate further.There emerges an increase in the number of banks, but regulation remained tight with the sector engaging various reform and regulatory measures from the National Bank of Ethiopia. Despite the regulators' aim to make sure a healthy and strong financial system, it is

apparent that some of its measures will affect the performance of banks (Tesfaye&Abdurezak, 2018).

This research, therefore, examines the combined effect of bank regulations on four selected twelve private Banks. The regulatory variables are Minimum Capital Requirement, Asset Quality, Reserve Requirement, and Liquidity requirement with explanatory variables Market risk, Management efficiency, and Real GDP growth rate. The study measures the performance of private banks by dependent variable Return on Asset (ROA). It will look at the effect of the regulatory variable differently than other researchers on the performance of private banks in the case of Ethiopia.

1.3. Research Questions

1. How minimum capital requirement affects the financial performance of private commercial banks?
2. How asset quality affects the financial performance of private commercial banks?
3. How reserve requirement affects the financial performance of private commercial banks?
4. What is the effect of liquidity requirement on the financial performance of private commercial banks?

1.4. Objective of the study

The study has the following general and specific objectives.

1.4.1. General objective

The general objective of this research shows the effect of bank regulation on financial performance of the selected twelve private banks in Ethiopia.

1.4.2. Specific objectives

The specific objectives of study address and evaluate:

1. The effect of minimum capital requirement on financial performance of private banks of Ethiopia.

2. The effect of asset quality on financial performance of private banks of Ethiopia.
3. The effect of reserve required on financial performance of Ethiopian private banks.
4. The effects of liquidity required on financial performance of private banks in Ethiopia.

1.5.Research hypothesis

Based on the above general and specific research objectives and previous empirical studies the following hypotheses are developed. Therefore, the study checks the following hypothesis regarding the effect of bank regulation in private commercial banks in Ethiopia.

H1: Minimum capital requirement regulation has significant and positive effect on the financial performance of private commercial banks in Ethiopia.

The regulators put minimum capital requirements, because of these banks have sufficient resources to bear losses incurred from bad loans or from other activity. Casu, Girardone&Molyneux (2006),Chortareasa, Girardone&Ventouric (2012) andAddisu (2017) positive and a significant effect on financial performance of private commercial banks. The researcher expects that ithas a positive effect on financial performance of private of private commercial banks in Ethiopia.

H2: Asset quality has significant and positive effect on the financial performance of private commercial banks in Ethiopia.

Asset quality is a good indicator of financial health. according to different researchers, the findings of the study conducted so far Muriuki, Kalui&Akuno (2019) and Javaid&Alalawi (2018)show that asset quality requirement is considered an influential factor on the financial performance of private commercial banks. The researcher expects that it has a positive effect on financial performance of private commercial banks in Ethiopia.

H3: Reserve requirement regulation has significant and negative effect on the financial performance of private commercial banks in Ethiopia.

The higher the required reserve ratio, the lower the amount of funds available to the banksSeveral studiesEden(2014), Addisu(2017),Anteneh (2014), and Tekalign (2020) have indicated that the reserve requirement is considered an influential factor on the financial performance of private commercial banks. The researcher expects that it has a negative effect on financial performance of private commercial banks in Ethiopia.

H4: Liquidity requirement regulation has significant and negative effect on the financial performance of private commercial banks in Ethiopia

Liquidity requirement can have different effect on financial performance of private commercial banks according to different researchers. The findings of the study conducted so farMuriuki, Kalui&Akuno (2019) and Tekalign (2020) show that significantly effects on the financial performance of private commercial banks. The researcher expects that it has a negative effect on banks financial performance of private commercial banks.

1.6. Commercial Banks Regulation in Ethiopia

The beginning of modern banking in Ethiopia was 1906; The first bank is called Abyssinia and the Ethiopian Monetary and Banking law that came into power in 1963 detached the function of commercial and central banking to create the National Bank of Ethiopia and commercial Bank of Ethiopia.

The National Bank of Ethiopia was established in 1963 by proclamation 206 of 1963 and started operation in January 1964. The proclamation raised the Bank's capital to Ethiopian dollars 10.0 million and granted broad administrative autonomy and juridical personality.

In Ethiopia, the National Bank of Ethiopia controls the banking sector by giving Licenses, supervising and regulating the operations of banks by the issuance of directives and Exercises, and performing such other powers and activities as central banks regularly perform. Some of the reasons include protecting depositor's funds, maintaining public trust and confidence, ensuring that:

- banks properly manage their liquidity, safety and stability of the banking system
- mobilization of resources and meeting the financing needs of growing national economy,

- newly established banks can operate and compete successfully with existing/new banks (NBEDirectivesSBB/52/2012, SBB/55/2013,SBB/57/2014,SBB/782021).

To further improve financial resilience and soundness of banks and banking systems NBE issued directive No. SBB/78/2021 raise the minimum paid-up capital required 5 billion by banks effective from 12 April 2021 which was previously 500 million. A bank in the process of share subscription succeeds to collect 500 million apply within 6 months and getting permitted banking business licenses, an existing bank whose paid-up capital is below birr 5 billion shall raise its paid-up capital to the said amount by June 30, 2026: and all banks (existing bellow said amount and in the process of share subscription) required action plan for capital increase.

NBE obliges banks to hold a portion of their balance in a reserve account as a monetary policy instrument and prudent regulation tools, because of that, increase the reserve requirement on commercial banks from 5% (SBB/37/2004 Directive) to 10% starting from July 2007 (Directive SBB/42/2007 Directive) and added to 15% effective from April 2008 (SBB/45/2008 Directive). The NBE amend the reserve requirement downwards to 10% effective from Jan 2012 (Directive No. SBB/46/2012) and further to 5% of all deposits effective March 2013 (Directive No. SBB/55/2013).

To provide guidelines to development finance institutions, NBE issued a directive in January 2012 (No.SBB/52/2012) regarding asset classification and provision to regulate asset quality of the banks to assure that loans are regularly reviewed and classified in a manner that appropriately shows risk and timely (sufficiently) provision are made. Loans are classified as:

- Pass (Less than 30 days for short term loan and less than 6 months for medium and longer term).
- Special Mention (Past due 30 days but Less than 90 days for short term loan and Past due 6 months but less than 12 months for medium and longer term),
- Sub Standard (Past due 90 days but Less than 180 days for short term loan and Past due 12 months but less than 18 months for medium and longer term),
- Doubtful (Past due 180 days but Less than 360 days for short term loan and Past due 18 months but less than 3 years for medium and longer term),

- Loss (Past due 360 days for short term loan and Past due date of 3 years for medium and longer term).

The provision of loan requirement for pass loan, special mention loan, substandard loan, doubtful loan and loss loan is 1%,3%,20%,65% and 100% respectively as per the classification category.

To ensure that banks properly manages their liquidity to maintain more public trust and confidence, they increase the liquidity requirement to:

- 15 % (Directive No. SBB/15/96) effective from 20 November 1996
- 25% (SBB/44/2008) effective from 7 April 2008
- down ward to 20% (SBB/45/2012) effective from 2 January 2012 and
- further decrease to 15%(SBB/57/2014) effective from 1 October 2014.

Without its prior any written approval,NBE Prohibited not to grant any new or additional loan or credit accommodation to any person; while commercial banks not succeed to meet the minimum regulatory liquidity requirement. This impacted Banks to deposit more and decrease loan discernment.

1.7.Significance of the study

This study contributes the following significance for bank stake holders.

1. It gives some idea for policymakers or regulatory bodies on the effect of the policy on the performance of the banking industry, take precondition and deep consideration at the time of policy formulation and implementation.

2. It supports banks in decision making and to use efficiently and effectively gain opportunities from the bank regulation. It helps to know the challenges & give appropriate action that occurred due to regulation and exchange feedback with the regulatory body. it also helps to know the effect of the policy related to their performance and gives an idea in the improvement of the regulation.

3. It gives idea for potential shareholders (investors) about the Ethiopian bank regulation and effects before and after investment.

4. It could be used as bench mark for other countries bank regulatory body.
5. It benefits academicians and researchers to serve as reference material for those interested to conduct future study in the area.

1.8.Scope of the study

This study considers four regulatory requirement variables.These are: minimum capital requirement, asset quality, reserve requirement & liquidity requirement with explanatory variables: market risk, management efficiency, and real GDP growth rate.

Tenconsecutive years from 2011 to 2020 and 12 Banks established and opened within the specified time rangehave been considered in the study. These are Awash Bank, Dashen Bank, Bank of Abyssinia, Wegagen Bank, Hibret Bank, Nib Bank, Co-operative Bank of Oromia, Lion International Bank, Oromia International Bank, Zemen Bank, Buna International Bank, Berhan Bank.

1.9.Limitation of the Study

The study is limited to look at the effect of the regulatory requirement only four directives variables on banksfinancial performance, which is applied by the National Bank of Ethiopia, and observed for ten consecutive years (2011- 2020) which may not give the whole picture; but it will indicate facts and figures in the regulatory practice.

1.10. Organization of the Study

This study is prepared in five sections. Chapter one presented the introduction, statement of the problem, research objective, significance, scope, and limitation of the study. The second chapter explains the review of the related theoretical and empirical literature. Chapter three presented a detailed description of the methodology employed in the research. Chapter four included data presentation, analysis, and interpretation. Finally, the last chapter summarizes and concludes the whole work of the research and gives recommendations based on the findings.

1.11. Definition of Terms

The following words and phrases have the under mentioned meaning throughout my research report;

Bank regulation is a form of National Bank regulation which subjects banks to certain requirements, restrictions and guidelines, designed to create market transparency.

Bank efficiency means a bank is more likely to be efficient if its manager either has a strong financial stake in the bank, or is closely monitored by stockholders and given appropriate incentives

Loan loss provision means a banks create a loan loss provision to set aside funds for default or problem loans.

Financial performance is a complete evaluation of a bank's overall standing in categories such as assets, liabilities, equity, expenses, revenue, and overall performance.

Deposit is a financial term that means money held at a bank.

Private Commercial Bank is a category of banking that aims to provide privileged services to its customers that primarily owned and operated by private individuals and business organizations.

Liquidity refers to the ease with which an asset, or security, can be converted into ready cash.

A stakeholder is a party that has an interest in a banks and can either affect or be affected by the business.

Chapter Two

2 Literature Review

2.1 Regulation and Financial performance of Commercial Bank

2.1.1. Minimum Capital Requirement

According to Casu, Girardone&Molyneux (2006),Regulators puts minimum capital requirements because these banks have sufficient resources to bear losses incurred from bad loans or other activity. As such, banks require generating sufficient performance for their equity to increase in value to increase new shareholders as well as maintain established shareholders.

Minimum paid-up capital is required for banks to further improve the financial flexibility and soundness of banks and the banking system. Existing strong capable and well-capitalized banks are necessary for further mobilization of resources and meeting the financial needs of the rising national economy(NBE, 2021).

Dill (2020) Stated that the banking law by applying regulations define what constitutes capital for capital adequacy purpose and the minimum amount of capital that banks must preserve to be in fulfillment with capital regulation. Minimum capital requirements are seen as the most successful and popular tools of banking supervision, as the assurance that banks have bumper to absorb unpredicted losses(Bikker&Bos, 2008).

As funding through capital is comparatively costly evaluated with funding through deposits, minimum capital requirements affect the profitability of banks and their international competitiveness. So, regulators tried to level the playing field of international banks by harmonizing minimum capital requirements (Stolz, 2007). The main reason for banks to have capital adequacy is if bank owners have more capital at risk, enlarge that they would benefit from risk business, would be compensated by the potential loss of their capital if their bank were to practice high losses (Mekonen&Melesse, 2014).

2.1.2. Asset Quality

According to Yonas&Hamdu& W/ Michael (2015),Experience of credit risk, trends of nonperforming loans, and bank borrower effectiveness strength, will decide the health of the asset quality of the bank. The quality of assets held by an individual bank has a force on the performance and health of the bank.

Javaid&Alalawi (2018) Stated that controlling and assessing asset quality indicators is significant since risks to the solvency of financial institutions often arise from the impairment of assets. Asset quality is subject to the quality of credit evaluation, monitoring and collection within each bank, and could be enhanced by collateralizing the loans, having adequate provisions against potential losses, or avoiding assets put in one place in one geographical or economic sector.

National Bank of Ethiopia monitor the quality of its credit portfolio, ensure that timely and adequate provision is made, and loans are frequently reviewed and prudently classified in a manner that appropriately reflects credit risk (NBE,2012).

2.1.3. Reserve Requirement

According to Casu, Girardone&Molyneux (2006),Banks need to maintain many reserve assets for prudential reasons. If a bank falls to its minimum desired stage of reserve assets, it will have to turn away requests for loans or seek to acquire additional reserve assets from which to enlarge its lending. The outcome, in either case, will generally be a decrease in the demand for loans when rising in interest rates. Reserve requirement is one of the important monetary policy tools and prudential regulation tools, which forces banks to preserve the proportion of their deposit balance with the National bank of Ethiopia (NBE,2013). Reserve requirements identify the amount of funds an institution must maintain against precise deposits(Cargill, 2017*).*

By varying the fraction of deposits that banks are forced to keep as reserve, the central bank can manage the money supply. This fraction is expressed in percentage terms and thus is called the required reserve ratio. The higher the required reserve ratio, the lower the amount of funds available to the banks, an increase in reserve requirements. It affects banks' ability to make loans

and reduces potential bank profits because the central bank pays no interest on reserves (Casu, Girardone&Molyneux, 2006).

2.1.4. Liquidity Requirement

Liquidity Requirement is essential to preserve public trust and confidence by ensuring that banks have a sufficient level of liquidity at all times. There is a need to preserve liquidity requirements consistent with the reserve requirement of banks; it is necessary to ensure that banks correctly manage their liquidity (NBE,2004).

Casu, Girardone&Molyneux (2006) stated that liquidity risk is created in the balance sheet by a mismatch between the size and maturity of assets and liabilities. It is the risk that the bank is maintaining insufficient liquid assets on its balance sheet and thus is incapable to meet requirements without impairment to its financial or reputational. A key risk for banks in liquidity transformation is liquidity risk because of their heavy dependence on short-term funding. Depositors want to remain liquid and may withdraw their cash without warning, whereas borrowers favor long-term funding (Dill, 2020).

If a bank is incapable to meet its liquidity requirements it will first attempt to obtain support through the lender-of-last-resort facility by borrowing from the central bank. However, if this option is not available, then the bank will have to consider bearing the losses from its capital resources. Therefore, reducing the bank's capital position (Casu, Girardone&Molyneux, 2006). Credit risk relates to the other side of the coin of banks' function in liquidity transformation (Dill, 2020).

2.1.5. Market Risk

Dill (2020) defines market risk as the risk of loss ascending from movements in market prices, which fair value accounting mandates reflected in reported income. A bank can measure its experience with market risk by evaluating the effect of shifting rates and prices on the earnings or economic value of a financial instrument, portfolio, or the entire institution. For most banks, the most important market risk is interest rate risk.

According to Hoose (2010), Interest rate risk is another form of market risk, which arises mostly through the potential for interest rates on liabilities to rise more rapidly than increases in interest rates on assets. Most of the time commonly used measurement of a bank's exposure to interest rate risk is the ratio of interest-sensitive assets to interest-sensitive liabilities. If this ratio is significantly greater (less) than unity, then an institution is vulnerable to losses if the general level of interest rates declines (rises).

2.1.6. Management Efficiency

According to Muriuki.Kalui&Akuno (2019),There is a requirement in making sure financial management efficiency through an appropriate and structured policy. This will make sure sufficient capitalization of banks to guarantee financial stability of the economy. It is critical to establish management quality as it affects profitability and efficiency (Javaid&Alalawi,2018). The study measures the efficiency of the manager by using a ratio. Management efficiency is measured by comparing total non-interest income with the total non-interest expense.

2.1.7. Real GDP Growth Rate

Dynan K. (2018) defines Gross domestic product (GDP) as the value of the goods and services produced by the nation’s economy less the value of the goods and services used up in production. Considerate Real Economic Growth Rate, the real economic growth rate is expressed as a percentage that shows the rate of change in a country's GDP, typically from one year to the next. Another economic growth measure is the Gross National Product (GNP), which is preferred if a nation's economy is substantially dependent on foreign earnings.

The real growth rate of GDP is a more useful measure than the nominal GDP growth rate because it reflects the effect of inflation on economic data. The real economic growth rate is a "constant dollar" figure, avoiding the distortion from periods of extreme inflation or deflation to give a more consistent measure (Ganti, 2021).

2.1.8. Return on Asset

According to Javaid&Alalawi (2018),ROA shows the capability of management to get deposits at a fair cost and invest them in profitable investments. This ratio displays how much net income

makes per dollar of assets. The higher the ROA means the more profitable the banks. the deposit has a significant and positive impact on overall banking performance measured by ROA (Ferrouhi, 2017).

Return on Assets (ROA) is the measurement of profit ratios. In the examination of financial statements, this ratio is most often emphasized, because it can show company achievement to create profits. ROA can measure the company's ability to generate profits in the past to then be predictable in the future. Assets are used for general company properties, obtained from the capital itself or from foreign capital that has been transformed into company assets used for corporate sustainability (Rosikah et al, 2018).

2.2 Theory of Bank Regulation

2.2.1. Why Regulate Banks

According to ping (2014),Private interest and public interest theories of regulations are designed to clarify why regulation is done? Banks are the purpose for-profit and bankers are free to make many decisions in their daily operations, banking is commonly cared foras a matter of public interest. As per Spong(2000)banking laws and regulations expand too many aspects of banking, including who can open banks, what products can be offered, and how banks can expand.

Banking regulation refers to the part of the enforceable rules, arranged by regulatory authorities, which administer the activities of banks, on the other way banking regulation is concerned with a banking regulator's interference, unintended or intentional, with the activities of individual banks, to achieve the purposes of legislation and policies(Ping,2014).

Spong(2000) defines Bank regulation has included serving numerous objectives which have changed over time and on occasion even conflicted with one another. The following sections focus on several of the more commonly accepted objectives of bank regulation. Also, because of the potential for conflict among regulatory objectives, particular attention is given to what banking regulation should not do.

As per Cargill (2017) regulation and supervision are focused on the direction of creating equal competition in the financial system, through a wide choice of regulations on the part of the

Federal Reserve and other agencies to adjust entry and exit, competitive performance, etc. The government enforces widespread regulations on the structure and performance of the financial system.

Cargill (2017) argue thatregulatory and supervisory authority by the government covers an extensive variety of roles fundamentally planned to bound risk-taking by individual depository institutions and sustain public confidence in depositing money.

Banking poses various unique problems for customers and creditors. First, various bank customers use a bank primarily when writing and cashing checks and carrying out other financial transactions. So, they must maintain a deposit account. As a result, bank customers assume the purpose of bank creditors and become associated with the prosperities of their bank. This is the difference from most other businesses, where customers only pay for goods or services and never become creditors of the firm (Spong, 2000).

These objectives can be accomplished by regulation and supervision, to limit imprudent lending by depository institutions; ensure that an adequate level of reserves and capital is maintained; monitor the operations of depository institutions through frequent reporting requirements on asset and liability operations; monitor operations of depository institutions via on-site examinations; and provide deposit insurance backed by the full faith and credit of the government (Cargill, 2017).

2.2.2. Regulation and Financial Stability

According to Spong (2000), Banking regulation must seek to give a stable framework for making payments. With the huge volume of transactions behavior, every day by individuals and businesses, a safe and acceptable means of payment is serious to the strength of our economy.

As per Cargill (2017*)* during the beginning, central banks were planned to just ensure a stable monetary growth to keep price stability, provide lender of last resort facilities on occasion and deliver other services to create a national payments system.

Bikker&Bos (2008) argue that the banking operations of various banks are fairly similar, financial pressure emerging in one bank may point out similar difficulties in others. In many

cases, it is difficult to differentiate bank-specific shocks from general shocks. Thus, a run on one bank may produce runs on other banks, bringing about serious financial instability. Central banks in the beginning started to conduct activist policies to offset shocks to the economy by conducting countercyclical monetary policy (Cargill, 2017).

As per Spong (2000) it is hard to envision how a multifaceted economic system could function and avoid serious disturbances if the multitude of daily transactions could not be finished with a high degree of certainty and safety. Bank regulation should thus preserve variations in business activity and problems at individual banks from unsettled the flow of transactions across the economy and threatening public confidence in the banking system.

2.2.3. Regulation Structure on Efficient and Competitive Financial System

According to Spong (2000),One of the reasons for bank regulation is customers are provided quality services at competitive prices. Thus, is to make a regulatory structure that supports efficiency and competition and ensures a sufficient level of banking services throughout the economy. The support of an efficient and competitive banking system carries a number of implications for regulation. Competition and efficiency are based on the number of banks operating in a market, the freedom of other banks to enter and compete, and the ability of banks to accomplish an appropriate size for serving their customers.

As per Falzon (2013) the regulation of an industry is usually motivated by market imperfections and/or (the risk of) market failures that can be very costly for society. This implies that there are 'gains' connected with such regulation. However, regulation is not costless, and it is vital that the 'cost' of regulation does not exceed its expected gain.

Banking regulation must also take an approach that does not unnecessarily restrict the activities of commercial banks, place them at a competitive disadvantage with less regulated firms, or hinder the capability of banks to serve their customers' financial wants. Finally, regulation should promote a banking system that can adapt and participates in response to changing economic conditions and technological advances (Spong, 2000*).*

2.2.4. Regulation and Consumer Protection

According to Spong (2000),Another objective of banking regulation is to protect consumer interests in different aspects of a banking relationship. The previous regulatory objectives serve to protect consumers in a different way, mainly through safeguarding their deposits and encouraging competitive banking services. Though, there are a lot of other ways consumers are protected in their banking activities. These extra forms of protection have been implemented through a sequence of legislative acts passed over the past few decades.

Cargill (2017) argue that a major focus of government regulation and supervision is the protection of the consumer of financial services, by this assumption that the consumer is at a disadvantage because of a lack of knowledge of financial transactions as a result of their complexity and the fact that financial institutions have a much higher degree of market power than the individual.

As per Casu, Girardone&Molyneux (2006) the financial services industries are politically sensitive ones and largely depend on public confidence. Due to the nature of their activities illiquid assets and short-term liabilities, banks are more difficult than other firms because of the inter attachments of banks; the failure of one institution can directly affect others. Banking systems are susceptible to systemic risk, which is the risk that problems in one bank will be transferred through the whole sector.

Consumer protection goals are consistent with good banking principles. So, credit and deposit exposure and knowledgeable customers should be of most benefit to bankers offering competitive services. Similarly, equal and unbiased treatment of borrowers is necessary for any banker planning to maximize profits. The increasing difficulty of financial instruments and the uniqueness of individual customers, although, have made consumer protection a very difficult and detailed regulatory process (Spong, 2000*).*

2.2.5. Types of Regulations

2.2.5.1.Systemic Regulations

Ping (2014) stated that systemic regulations define as regulations that depend mostly on the safety and soundness of the financial system. Casu, Girardone&Molyneux (2006) Matching with the concept that banks are special, systemic regulation is primarily dependent on the inherent risk of systemic failure for the total economy.

According to Casu, Girardone&Molyneux (2006),All public policy regulations are planned to minimize the risk of bank runs that goes under the name of the government safety net. Precisely, this safety net includes two main features: deposit insurance arrangements and the lender of last resort function.

2.2.5.1.1 Deposit insurance

Casu, Girardone&Molyneux (2006) define deposit Insurance as an assurance that all or portion of the amount deposited by savers in a bank will be paid in the happening that a bank fails. The guarantee may be either clearly known in law or regulation, obtainable privately without government support or maybe incidental implicitly from the verbal promises and or past events of the authorities.

According to Ping (2014), Deposit insurance stands for a financial safety net commonly used by governments to preserve depositors' confidence in the event of financial instability and thus avoid bank runs.

As per Bonn (2005)deposit insurance is called the guarantee that all or part of a depositor's debt with a bank will be honored in the event of bankruptcy. The definite form of insurance structures can fluctuate in a number of behaviors, including the fee structure (flat fee against variable, risk related payments); the degree of exposure (full against partial coverage, maximum limits); funding provisions (funded versus unfunded systems); private versus public solutions; compulsory versus voluntary participation.

Bikker&Bos(2008) argue that government deposit insurance is planned to ensure public confidence in deposit money in order to put off contagion. (Cargill, 2017*)* deposit insurance creates risk shifting from the bank's deposit holders to all other banks or taxpayers.

The outcome of deposit insurance on the incentives of the bank depends upon the nature of the insurance contract (and also on any other complementary regulatory measures). In specific, the consequence of the deposit insurance on the bank will depend on whether or not the insurance premium paid by the bank is determined by the individual bank's risk (Bonn, 2005).

2.2.5.1.2 The lender of last resort (LOLR)

According to Casu, Girardone&Molyneux (2006),The lender of last resort function is one of the main roles of a central bank. The central bank, or other central institution, will give funds to banks that are financial complexity and are not capable to access any other credit guide.

The central bank is responsible for monetary control and lender of last resort services, but there is no innate reason why central banks should play a major role in financial regulation and supervision (Cargill, 2017*)*.

As per Bonn (2005) lender of last resort involvements should be strictly limited to illiquid banks, easing only very temporary liquidity problems faced by banks (Emergency Liquidity Assistance), not extending also to help insolvent banks. whenever the lender of last resort assists insolvent banks, its intervention has the same result of flat-rate unfunded deposit insurance, giving banks a strong incentive to adopt a riskier position than otherwise. By way of deposit insurance, when such encouragements extend across the financial system, the macroeconomic consequences can be severe.

According to Cargill (2017), The reason central banks are most often allocated the responsibility of monetary regulator and lender of last resort is that in a modem reversed pyramid monetary system, the central bank controls the reserve base. Managing the reserve base permits the central bank to function as a lender of last resort and deliver general control of the money supply. The lender of last resort purpose was designed to limit infectivity among depository institutions, and

in this regard, the central bank was more passive than activist, but now central banks have been allocating accountability for monitoring and responding to risk.

2.2.5.2.Prudential Regulation

As per Ping (2014) prudential regulation depends on the quality of individual banks' systems for identifying, measuring, and managing the various risks in their business operations. Prudential regulation is mainly function with consumer protection. It attaches to the monitoring and supervision of financial institutions, with specific care paid to asset quality and capital adequacy (Casu, Girardone&Molyneux, 2006).The dominant theories on prudential regulation concerned with restricting banks capital structure and portfolio allocations (Bikker&Bos, 2008).

According to Casu, Girardone&Molyneux (2006),Prudential regulation concerned with that consumers are not in a position to judge the safety and soundness of financial institutions because of defective consumer information and agency difficulties connected with the nature of the intermediation business.

2.2.5.3.Conduct of business regulation

Depending on how banks and other financial institutions behave in their business; Conduct of business regulation relates to information revelation, fair business practices, competence, honesty and integrity of financial institutions, and their employees (Casu, Girardone&Molyneux, 2006). Conduct of business regulation focuses on bank business practice in relative to consumers. Such regulation ensures consumers possess appropriate information and that banks comply with suitable industry practices(Ping, 2014).

According to Wellerdt(2015), The banking regulation creates a regulatorystructure for the trust in transactions, in financial markets and reduces information asymmetries between banks as providers and private persons asdemanders. Banking regulation is a multipurpose state instrument to impactthe development of a main economic sector.

2.2.6. Regulation and Risk on Banking Sector

2.2.6.1.The risk of excessive risk taking (moral hazard) in banking

Bonn (2005) stated that banks funding loans are generally financed by the deposits they received. This is by itself a powerful motivation for banks to grant credit in an insufficient practical way that makes them at too much risk. It is well known in the literature that with debt financing, the risk of failure of the financed investment is regularly accepted by the bank depositors; in the case of achievement, profits accrue mostly to the bank in general. however, this incentive is somehow moderated by the possibility of the market, both through depositors and other banks, that could monitor the risks expected by the bank's management.

The management of credit risk is essential to the long-term success of any banking organization and a serious component of a complete approach to risk management (Casu, Girardone&Molyneux, 2006).

The core determination of regulation is to avoid the extremely negative significance to the economy of extensive bank failures. There are two main components of arguments for banking regulation. These are attentions on the complete hazards of bank failures, and the essential for safety and stability in the payments system (Bonn, 2005).

2.2.6.2.The risk of bank runs and their effect on the economy

In the absence of market failures, open and competitive markets produce strong motivations to efficiently encounter the demands of consumers & to adapt shifting demands and technology over time. With very insufficient exceptions, in the absence of failure in the market, there is no economic explanation for regulation (Bonn, 2005).

Santomero (1970) defines Systematic risk as to the risk of asset value variation associated with systematic factors. It is sometimes mentioned as market risk, which is a somewhat vague term. By its nature, this risk can be prevaricated, but cannot be diversified completely away. Systematic risk can be thought of as an un-diversifiable risk. All investors accept this type of risk, whenever assets owned or claims issued can change in value as a result of wide economic factors. As such, systematic risk comes in many various forms. For the banking industry,

however, two are of greatest concern, namely variations in the general level of interest rates and the relative value of currencies.

The justification for regulation in banking is to discourse concerns over the safety and stability of financial institutions, the financial sector as a total, or the payments system. The explanation and the evaluation that follows essentially replicate the views of competition authorities (Bonn, 2005).

Wellerdt (2015) suggested that Systemic risks are a hazard for the business actions of banks, which are not limited to a single institution but have negative consequences on the overall economy through so-called domino effects. Banking regulation, therefore, focuses on so-called system-relevant banks, whose collapse cannot be reimbursed easily and could trigger other dangerous chain reactions. By confirming a workable, stable financial services sector with honesty also the confidence of bank customers of the financial services system is safe. The safety of market functions takes up on that. The safety of market roles is used to implement standards of manner for the business of credit institutions. the aim is to combat illicit financial operations and to protect the confidence of investors and depositors.

2.3 Empirical Literature

2.3.1. Studies in Global context

Yang, Gan&Lee (2019) Studies Role of Bank Regulation on Bank Performance indication from Asia-Pacific Commercial Banks found that capital requirement improves bank performance, identified the positive relationship between regulation, supervision, and bank efficiency, especially in small-sized banks. Smaller banks benefit more from harsher policies; regulatory authorities could relax the requirements for medium and large-sized banks to exploit operational efficiency.

Triki, Kouki, Dhaoua, &Calicec (2016) asses Bank regulation and efficiency: What works for Africa? Results show strong variations in the relationship between regulation and bank efficiency in Africa, and these variations are very often pressured by the risk level and size of banks. They find that the efficiency of large African banks improved with stiffer restrictions on entry whereas

the efficiency of smaller banks is delayed by tighter restrictions on exit. Similarly, high-risk banks advantage from increased restrictions on entry whereas low-risk banks do not get an advantage from increased restrictions on exit. And also found that more stringent capital requirements only improve the efficiency of large banks and low-risk banks.

Chortareasa, Girardone&Ventouric (2012) studies bank supervision, regulation, and efficiency: Evidence from the European Union The results indicate that, when significant, capital requirements and more influential supervisors increase bank efficiency. And restricting banks from engaging in security activities is strongly associated with lower bank efficiency and performance. Bank size appears to be an important factor that forces the differences in efficiency across banks, which is documented by a negative and statistically significant sign for the Logarithm of Total Asset coefficient. They found that larger banks operating in countries with less concentrated and more developed systems be liable to have relatively higher levels of efficiency.

Muriuki, Kalui&Akuno (2019) Assess the consequence of Bank Specific Factors on Financial Performance of Commercial Banks in Kenya found that capital adequacy, management efficiency, and liquidity management variables did not significantly affect the financial performance of commercial banks. Comparatively, asset quality and risk management significantly affect the financial performance of listed commercial banks in Kenya.

Javaid&Alalawi (2018) Studied Performance and Profitability of Islamic Banks in Saudi Arabia: An Empirical Analysis found that Asset quality which is expressed as the provision of non-performing loans to total loans is positively associated with the bank performance. This specifies that good asset quality is important for better bank performance. And the coefficient of the capital adequacy ratio is positive and highly significant, with both measures of profitability, reflecting the sound financial condition of Saudi banks. Management quality (is significantly positively connected to both performance ratios (ROA and ROE). They found that inflation is negatively related to profitability.

Barth, Lin, Ma, Seade&Song (2013) Studied based on an analysis of 4050 banks observations in 72 countries over the period 1999–2007, they discover that tighter restrictions on bank activities are negatively related to bank efficiency, though superior capital regulation strictness is slightly and positively related with bank efficiency. They also found that an increase in official supervisory power is positively associated with bank efficiency only in countries with independent supervisory authorities. Moreover, independence coupled with a more experienced supervisory authority tends to improve bank efficiency. Lastly, market-based monitoring of banks in terms of more financial simplicity is positively associated with bank efficiency.

Klomp&Haan (2011) Examine Banking risk and regulation. Collected data from 21 OECD countries for more than 200 banks for the period covered 2002 to 2008, the effect of bank supervision and regulation on banking risk is not synonyms. The results suggest that regulation and supervision do not have many results on low-risk banks, while most of their measures for the various bank size regulation and supervision the effect significant is high on highly risk banks. Moreover, the sensitivity analysis proposes that the effect of bank regulation and supervision also depends on the possession structure and the size of a bank.

Abidi&Lodhi (2015) the study examines the relationship between Reserve Requirement Ratio and Banks Profitability in Pakistan for the period 2005-2014. It emphasizes the effect of changes in reserve requirement on commercial banking profitability and how it affects the ROE and ROA. The finding of the study is that Reserve Requirement has a significant inverse relationship with banks' financial performance, which is measured by ROE and ROA.

2.3.2. Studies in Ethiopia

Eden (2014) Studies the Impact of National Bank Regulation on Banks Performance: Evidence from the Private Banks of Ethiopia for the outcome regression was used for the data of six private commercial banks in which collected starting from 2004 to 2013. Change in reserve requirement has a negative and significant effect on the bank's cost of intermediation measured through Net Interest Margin. Credit-cap has a negative and statistically significant effect on a bank's performance measured through both Return on Asset and Net Interest Margin. Bank size has a positive and significant effect on profitability in terms of asset return.

Addisu (2017) Examines the effect of bank regulation on the profitability of private commercial banks in Ethiopia. The outcome shows that the legal reserve requirements had a significant and negative effect on the profitability of private commercial banks. This means that when banks increase the amount of legal reserve it decreases their profitability. A capital requirement has positive and a significant effect on the profitability of private commercial banks. This means that Paid-up capital has a direct relationship with profitability. As the bank's Paid-up capital increases, they can get higher profit and market share also increase. The profitability of a private commercial bank's bank size has a significant effect. This means that bank size has a direct connection with profitability. When the bank size increase it can get more profit.

Anteneh (2014) evaluates the influence of Banking Regulation on the Performance of Private Banks. Quantitative and qualitative analysis used a panel data for ten years from 2003 to 2013 for 9 banks the result Minimum Capital Requirement Directive has been found to believe the Directive as essential because it prohibits entry in the sector; it reduces competition and is a good quality base for high-profit margin. Reserve Requirement of Banks Directive has been established to consider the Directive as essential having sound liquidity is basic and important in the banking industry. The regression analysis proposes that controlling for capital ratio, age, and size, the reserve requirement regulations positively affect liquidity and have a positive but less impact on ROA, and ROE harms NIM. Reserve requirement positively affects the liquidity of banks because a higher ratio guides to a higher reserve that would be reserved as part of the liquid assets of a bank.

Tekalign (2020) Studied Effect of National Bank of Ethiopia Prudential Regulation on the Performance of Private Commercial Banks in Ethiopia. Panel regression was used for the data of ten private commercial banks in the sample covered the period from 2009 to 2018 for ten private banks, Minimum capital requirement was a negative and insignificant relationship with performance. Because the coefficient was statistically insignificant they could not say it shows a negative effect on banks' financial performance. The legal reserve requirement ratio was negative and statistically insignificant, which means that the legal reserve requirement ratio does not affect the financial performance of private banks. The outcome shows that the liquidity requirement ratio was positive and statistically significant, which means that the liquidity

requirement ratio does affect the financial performance of banks. the inflation rate has a negative and insignificant relationship with the financial performance of banks. The coefficient was statistically insignificant they could not say it shows a negative effect on banks' financial performance. The bank size shows a negative effect on the bank's financial performance.

Conceptual Framework of the Study

The figure 2.1.isthe conceptual framework of the study that shows the interrelationship among variables to be used guiding the study.

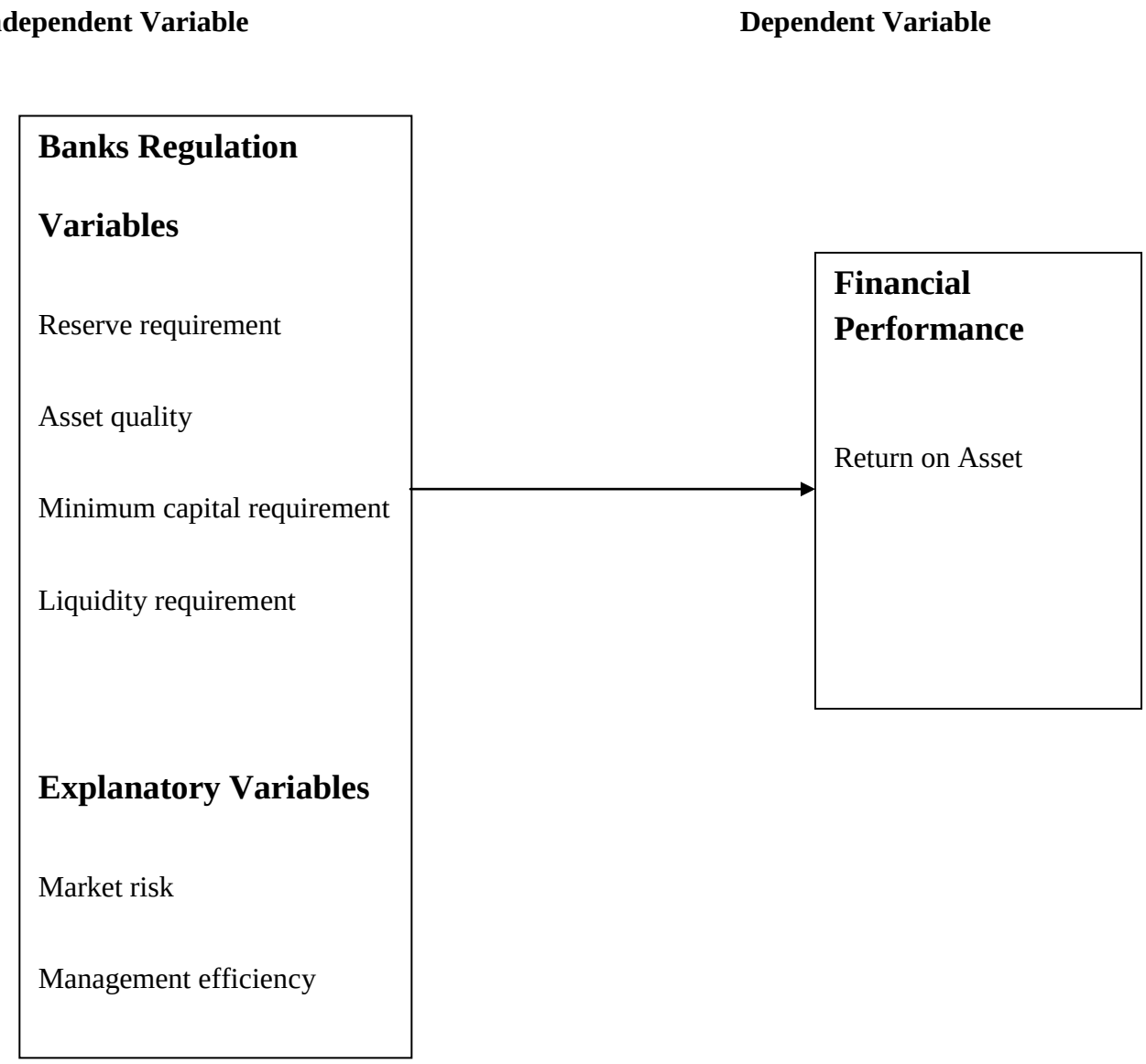


Figure 2.1. (Source: Own literature review)

Chapter Three

3 Research Methodology

3.1. Introduction

This Research and methodology section explains how the research outcome at the end obtained in line with meeting the objective of the study.

3.2. Research design

According to Kassu (2019),The research design is a plan to provide an appropriate framework for a study. A very significant decision in the research design process is the choice to be made on the subject of the research approach given that determines how relevant information for the study will be obtained.

The major purpose of this research is to show the effect of bank regulation on the financial performance of private banks in Ethiopia; so the study uses an explanatory type of research because as per Saunders, Lewis, and Thornhill(2009). Explanatory studies set up a causal relationship between variables. The importance is on studying a situation or difficulty to explain the relationship. Also known as causal research, is conducted to identify the extent and nature of causal and effect relationships between variables (Dudovskiy, 2018).

3.3. Method of Data Analysis

Ten years' data was gathered from selected twelve private commercial banks in Ethiopia, i.e. 120 samples were used. A multiple regression model was used for data analysis because regression is concerned with describing and evaluating the relationship between a given variable and one or more other variables. Especially, regression is an attempt to explain movements in a variable by reference to movements in one or more other variables. Regression as a tool is suppler and more powerful(Brooks, 2014).In addition, variables lead to multiple regression models, that is, models in which the dependent variable, or regressand, Y depends on two or more explanatory variables or regressors' (Gujarati, 2004).

The study use panel data because panel data can enrich empirical analysis in ways that may not be possible if we use only cross-section or time-series data. This is not to suggest that there are no problems with panel data modeling (Gujarati,2004).And alsoby merging time series of cross-section observations, panel data give more informative data, more variability, less collinearity among variables, more degrees of freedom, and more efficiency(Gujarati, 2004).

The situation often ascends in financial modeling where we have data comprising both time series and cross-sectional elements, and such a data set would be known as a panel of data or longitudinal data. A panel of data embodies information across both time and space (Brooks, 2014).

3.4. Population and sampling procedures

According to NBE (2019/2020) annual report reach there are 16 private banks in Ethiopia. In the regarding period out of 16 private commercial banks, 12 Banks fall within the sampling size frame. Selection of sample based on non-probability sampling, unlike probability sampling method, non -probability sampling techniques uses a nonrandomized method to draw the samples. Non- probability sampling method engages in judgment (Showkat&Parveen, 2017). The study covers ten years from 2011 to 2020 and the 12 Banks established and opened within the specified time range. These are Awash Bank, Dashen Bank, Bank of Abyssinia, Wegagen Bank, Hibret Bank, Nib Bank, Co-operative Bank of Oromia, Lion International Bank, Oromia International Bank, Zemen Bank, Buna International Bank, Berhan Bank.

3.5. Measurement of Variables

Definition and measurement of dependent and independent variables are presented under this section.

3.5.1. Dependent Variable

Return on Asset(ROA): Return on Asset is the capability of management to get deposits with a fair cost and invest them in profitable investments (Javaid&Alalawi, 2018).

3.5.2. Independent Variables

Minimum Capital Requirement: The regulatory body puts the banks to have sufficient resources to bear losses incurred from bad loans or from other activity (Casu, Girardone&Molyneux, 2006).

Asset quality:The Asset quality held by an individual bank has a force to the performance and health of the bank (Yonas&Hamdu& W/Michael,2015).

Reserve Requirement:Reserve requirements identify the amount of funds an institution must maintain against particular deposits (Cargill, 2017).

Liquidity Requirement:Liquidity Requirement is essential to preserve public trust and confidence by ensuring that banks have sufficient level of liquidity at all times (NBE, 2004).

Explanatory Variables

Market risk: A market risk by evaluating the effect of shifting rates and prices on the earnings or economic value of a financial instrument portfolio or the entire institution. For most banks, the most important market risk is interest rate risk (Dill,2020).

Management Efficiency: Management efficiency is measured by financial management efficiency through an appropriate and structured policy (Muriuki, Kalui&Akuno,2019).

Real GDP Growth Rate: As per Dynan (2018) Gross domestic product (GDP) is the value of the goods and services produced by the nation’s economy is less the value of the goods and services used up in production.

Table 3.1 **Dependent and Independent Variables measurement.**

Variable nature	**Variable**	**Variable Measurements**	**Measurement Scale**	**Data Collection Method**
Dependant	Return on Asset	Net Income to Av. Total Asset	Ratio	Secondary data
Independent	Reserve requirement	Reserve NBE to Total Asset	Ratio	Secondary data
Independent	Liquidity requirement	Liquid Asset to Deposit	Ratio	Secondary data
Independent	Asset quality	Provision to Total Asset	Ratio	Secondary data
Independent	Capital requirement	Log of Paid up capital	Ratio	Secondary data
Independent	Market Risk	Interest expense to Deposit	Ratio	Secondary data
Independent	Management efficiency	T.non interest Income to T. noninterest expense	Ratio	Secondary data
Independent	Real GDP growth rate	Annual Real GDP growth rate	Rate	Secondary data

Source: Developed by the researcher

3.6. Reliability Measure

According to Leedy and Ormrod (2005), Reliability of a measurement instrument is the extentto which it yields consistent results when the characteristic being measured has not been changed. Quality in the study is reliability, or the accuracy of an instrument. In other words, the extent towhich a research instrument consistently has the same results if it is used in the same situation on repeated occasions.

To ensure the reliability of measurement instrument the researcher performed that the data iscollected from large, wellknownorganizations such as those found in National Bank of Ethiopia (NBE) and from different Banks. The research is likely to be reliable and trustworthy. The continued existence of such organizations is dependent on the credibility of their data. Consequently, the researcher also believes that this study is reliable, and their procedures for collecting and compiling the data are likely to be well and accurate.

3.7. Data source and method of collection

According to Kabir (2016), The process of gathering & computing data on variables of interest to establish a systematic way that permits one to answer stated research questions, test hypotheses, and the estimated outcomes is called Data collection.

Technological advances have managed giant amounts of data that has been collected, compiled, and archived, and that is now easily reachable for research. Accordingly, using existing data for research is becoming more prevalent; hence, it is better to use secondary data analysis (Johnston, 2017).This study uses secondary data. The data is collected manually and from the websites of NBE and selected private banks annual audited financial report, and different government organizations.

3.8. Model Specification

Allen (1997) defines Model specification as the purpose of which independent variables should be incorporated in or excluded from a regression equation. The specification of a regression model should be based primarily on theoretical thoughts other than empirical or methodological

ones. A multiple regression model is actually a theoretical statement about the causal relationship between one or more independent variables and a dependent variable.

According to Creswell (2009),The variables need to be specified in quantitative research so that it is clear for readers what groups are receiving the experimental treatment and what outcomes are being measured. Usually, performance measures for Banks are similar to those applied in other industries, with return on assets (ROA), return on equity (ROE), or cost-to-income ratio being the most broadly used. (European Bank 2010). For this study, Return on Asset (ROA) is taken as a performance measure.

To study the effect of bank regulation on private banks' financial performance, the study estimates a linear regression model in the following way.

$$Y_{it}=\beta0+\beta1 RESRE_{it}+\beta2 LIQRE_{it}+\beta3\ ASEQ_{it}+\beta4\ CAPR_{it}+\beta5\ MKTRI_{it}+\beta6\ MGE_{it}+\beta7\ GDP_{it}+\varepsilon_{it}$$

Y_{it} = (ROA) = Bank Performance =Dependent Variable

i = Individual Bank (1-12)

t = Year (Time)

β0 = Regression Coefficient constant

β1, β2, β3... = Regression Coefficient

ε = Error Terms

RESRE = Reserve Requirement

LIQRE = Liquidity Requirement

ASEQ = Asset Quality

CAPR = Capital Requirement

MKTRI= Market Risk

MGE = Management Efficiency

GDP = Real Growth Domestic Product

Chapter Four

4 Analysis and Findings

This section of the study depicts collected data analysis and presents the result of hypothesis testing to achieve the possible outcome of the effect of bank regulation on the performance of private banks in Ethiopia

It has different subsections these are descriptive statistics of dependent and independent variables, Correlation analysis, present a test for the classical linear regression model (CLRM), Test Random Effect (RE) Versus Fixed Effect (FE) Models, and Regression.

4.1 Descriptive statistics of the Data

The descriptive statistics for dependent and independent variables are presented below:

In the data, there are twelve private commercial banks in Ethiopia from 2011 to 2020 within a total observation. The dependent variable is Return on Asset; it measures the performance of the banks. The independent variables are; Reserve requirement, Liquidity requirement, Asset quality, Capital requirement, Marketing risk, Management efficiency, and Real GDP growth.

Table 4.1 The descriptive statistics for dependent and independent variables

	ROA	RESRE	LIQRE	ASEQ	CAPR	MKTRI	MGE	GDP
Mean	2.937239	8.341944	33.23161	1.020260	3.001355	3.196863	97.46482	9.160000
Median	2.819719	6.844116	28.71969	0.855239	3.037390	3.091260	83.54085	9.450000
Maximum	6.347746	27.16977	76.96900	3.593317	3.767131	5.280537	283.0768	11.40000
Minimum	0.352439	0.430668	13.16966	0.136736	2.129274	1.537545	28.19163	6.100000
Std. Dev.	0.801446	5.429460	15.35555	0.608989	0.352278	0.791214	48.35648	1.501730
Skewness	0.757831	1.526103	1.031731	2.088885	-0.386453	0.389638	1.106653	-0.525160
Kurtosis	5.769827	4.883057	3.447639	8.130236	2.545270	2.660087	4.396317	2.486999
Jarque-Bera	49.84585	64.30932	22.29128	218.8654	4.020816	3.614054	34.24213	6.831701
Probability	0.000000	0.000000	0.000014	0.000000	0.133934	0.164141	0.000000	0.032848
Sum	352.4687	1001.033	3987.794	122.4312	360.1626	383.6236	11695.78	1099.200
Sum Sq. Dev.	76.43564	3508.005	28059.34	44.13331	14.76787	74.49637	278263.6	268.3680
Observations	120	120	120	120	120	120	120	120

Source: Developed by the study through E-views 12

Table 4.1 Shows the descriptive statistics for dependent and independent variables. As a result, ROA has a positive mean value of 2.9%, even if it rises to the maximum of 6.35% and minimum value of 0.35%; the standard deviation of 0.80 showed lower variability from the mean.

It also showed that the values for the NBE regulation variables also show along with that of ROA. The Variables namely are; RESRE, LIQRE, ASEQ, and CAPR, which assumed to have various characteristics and outcomes.

Reserve Requirement has a mean value of 8.34 and a standard deviation of 5.43, which is high variability from the mean and explain the presence of fluctuation in the reserve requirement ratio during the study period.

The mean value of the liquidity requirement ratio is 33.23, and the standard deviation is 15.36, which show that there is high variability from the mean of private commercial banks in Ethiopia and the maximum and the minimum is 13.1% and 76.9%, which show there are some private commercial banks that are more liquid than others at the time of the study period.

Asset quality had a 1.02 mean value with a standard deviation of 0.6, which is a low variability from the mean. It can explain that most private commercial banks can control the asset from deteriorating quality, and they stand in a good position.

The mean value of the capital requirement ratio is 3.0 with a maximum and a minimum value of 2.12 and 3.76, the standard deviation is 0.35, which shows low variability from the mean with most of the private commercial banks in Ethiopia full fill the minimum capital requirement at the period of the study.

The measure of bank Marketing risk exposure showed a mean value of 3.1% and the standard deviation is 0.79 and the maximum and minimum were 5.3% and 1.5%. This can be interpreted as most of the Bank's paid interest for depositors relatively have no big difference.

The mean value of the Management Efficiency ratio was 97.4% and 48.3, which shows high variation from the mean. This can be interpreted as some banks getting non-interest income is very high and some banks controlling of their non-interest expense is very low.

The mean value of the real GDP growth rate is 9.1, this shows the average real growth rate of the country's economy over the past ten years. The standard deviation was 1.5 from the mean.

The maximum growth of the economy was recorded at 11.8% and the minimum was at 6.1% during the study period.

4.2 Correlation analysis

According to Brooks (2014), Correlation measures the degree of linear association between variables. That association between the two is on average related to a range given by the correlation coefficient. Values of the correlation coefficient are always extent between +1 and -1. A correlation coefficient of +1 indicates the existence of a perfect positive association between the two variables. On the other hand, a correlation coefficient of -1 indicates a perfect negative association.

4.2.1 Correlation analysis between ROA and explanatory variables

The ROA reflects the effect of bank regulation on the financial performance of private commercial banks in Ethiopia. Measurement shows correlated with other explanatory variables positively or negatively. In table 4.2 below, the correlation analysis was undertaken between ROA and explanatory variables; Reserve requirement, Liquidity requirement, Asset quality, Capital requirement, Marketing risk, Management efficiency, and Real GDP growth.

As reported in table 4.2 below, in this study the coefficient of the higher one is 0.78. Since their coefficient is less than 0.80 we can conclude there is no series multicolinarity problem as supported with empirical evidence; Gujarati(2004*),* Cooper & Schindler (2009) and Hair et al. (2006).

Table 4.2 **Correlation analysis between ROA and explanatory variables**

	ROA	RESRE	LIQRE	ASEQ	CAPR	MKTRI	MGE	GDP
ROA	1.000000	0.316830	0.412596	0.018191	-0.322188	-0.193109	0.757415	0.242561
RESRE	0.316830	1.000000	0.745431	0.085063	-0.572592	-0.383158	0.626305	0.485814
LIQRE	0.412596	0.745431	1.000000	0.051701	-0.788265	-0.571368	0.715224	0.533503
ASEQ	0.018191	0.085063	0.051701	1.000000	-0.073604	0.031165	0.169969	0.070271
CAPR	-0.322188	-0.572592	-0.788265	-0.073604	1.000000	0.590250	-0.624868	-0.578342
MKTRI	-0.193109	-0.383158	-0.571368	0.031165	0.590250	1.000000	-0.364519	-0.580697
MGE	0.757415	0.626305	0.715224	0.169969	-0.624868	-0.364519	1.000000	0.509959
GDP	0.242561	0.485814	0.533503	0.070271	-0.578342	-0.580697	0.509959	1.000000

Source: Developed by the researcher through E-views 12

As shown in table 4.2, there was a positive correlation between Return on Asset and Reserve requirement, Liquidity requirement, Asset quality, Management efficiency, and Real GDP growth. 0.317,0.413,0.018,0.7574 and 0.2425 respectively. As per the Table4.2 The result also showed a negative correlation between CAPR and MKTRI. -0.322 and -0.193 respectively. The linear relationship RESRE, LIQRE, ASEQ, CAPR, MKTRI, MGE, and GDP was statistically different from zero/statistically significant.

4.2.2 Correlation analysis among explanatory variables

The correlation between explanatory variables; Reserve requirement, Liquidity requirement, Asset quality, Management efficiency, and Real GDP growth included in this study are presented and analyzed.

As shown in Table 4.2 above, all explanatory variables are correlated with each other positively and negatively with values different from zero. Since their coefficient is less than 0.80 and VIF is less than ten as shown in Table 4.8, it can be concluded as there is no series multi-collinearity problem as supported by empirical evidence Gujrat (2004), Hair et al. (2006).

4.3 Test Assumption for Classical Liner Regression Models (CLRM)

4.3.1 Test for Homoscedasticity assumption

Homoscedasticity, or homogeneity of variances is an assumption of the variance of the residual, or error term, in a regression model is constant. That is, the error term does not vary much as the values of the predictor variable vary. The errors do not have a constant variance; it is calledheteroscedastic(Brooks, 2014). To test this assumption, the ARCH test was used having the null hypothesis of heteroscedasticity. Both F-statistic and chi-square tests statistic were used.

Table 4.3 Test for Homoscedasticity assumption

Heteroskedasticity Test: ARCH

F-statistic	0.399139	Prob. F(1,117)	0.5288
Obs*R-squared	0.404582	Prob. Chi-Square(1)	0.5247

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 01/05/22 Time: 14:04
Sample (adjusted): 2 120
Included observations: 119 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.198833	0.035274	5.636776	0.0000
RESID^2(-1)	0.057020	0.090254	0.631775	0.5288

R-squared	0.003400	Mean dependent var	0.211123
Adjusted R-squared	-0.005118	S.D. dependent var	0.320171
S.E. of regression	0.320989	Akaike info criterion	0.581847
Sum squared resid	12.05500	Schwarz criterion	0.628554
Log likelihood	-32.61987	Hannan-Quinn criter.	0.600813
F-statistic	0.399139	Durbin-Watson stat	1.972149
Prob(F-statistic)	0.528767		

Source: Developed by the researcher through E-views 12

As shown in the above table 4.3 for the test of both the F-statistic and Chi-Square versions of the test figure gave a similar conclusion that there is no indication for the presence of heteroskedasticity, since the p-values were more than 0.05. As shown in table 4.4 p-value of both F-statistics and Chi Qquare are excess 0.05 that is 0.5288 and 0.5247 respectively. So, the assumption showed that the variance of the error term is constant or homoskedastic and had no evidence of heteroskedasticity and adequate evidence to reject the null hypothesis of heteroskedasticity.

4.3.2 Test for absence of autocorrelation assumption

According to Gujarati (2004), The term autocorrelation may be defined as "correlation between members of series of observations ordered in time (as in time series data)or space (as in cross-sectional data). Autocorrelation represents the degree of similarity between a given time series and a lagged version of itself over successive time intervals. Autocorrelation measures the relationship between a variable's current value and its past values (Brooks,2014).

The test for autocorrelation was made by using the HAC Test Newey West standard. The Newey-West standard errors are calculated by most modern computer software packages. Therefore, we do not have to be concerned about the EGLS (Estimated Generalize Least Square). One must use the Newey West technique to correct OLS standard errors; Instead of using EGLS, we can use OLS but correct the standard errors for autocorrelation by the Newey West HAC technique. One benefit of the HAC procedure is that it not only corrects autocorrelation but also heteroscedasticity if it is present (Gujrat, 2004). As shown in Table 4.4 the standard errors were corrected for autocorrelation by the newly west HAC technique by fixed bandwidth 5.000, indicating there is no autocorrelation problem as supported with empirical evidence of Gujarati (2004) and Brooks (2014).

Table 4.4 Test for absence of autocorrelation assumption

Dependent Variable: ROA
Method: Least Squares
Date: 01/05/22 Time: 14:06
Sample: 1 120
Included observations: 120
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 5.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESRE	-0.024181	0.014052	-1.720802	0.0880
LIQRE	-0.004063	0.006797	-0.597733	0.5512
ASEQ	-0.162744	0.115267	-1.411881	0.1608
CAPR	0.338361	0.244162	1.385802	0.1686
MKTRI	-0.068738	0.096871	-0.709582	0.4794
MGE	0.017723	0.002371	7.473852	0.0000
GDP	-0.067428	0.032021	-2.105734	0.0375
C	1.534497	1.050633	1.460545	0.1469

R-squared	0.658203	Mean dependent var	2.937239
Adjusted R-squared	0.636841	S.D. dependent var	0.801446
S.E. of regression	0.482973	Akaike info criterion	1.446629
Sum squared resid	26.12546	Schwarz criterion	1.632462
Log likelihood	-78.79773	Hannan-Quinn criter.	1.522096
F-statistic	30.81144	Durbin-Watson stat	1.172962
Prob(F-statistic)	0.000000	Wald F-statistic	17.36948
Prob(Wald F-statistic)	0.000000		

Source: Developed by the researcher through E-views 12

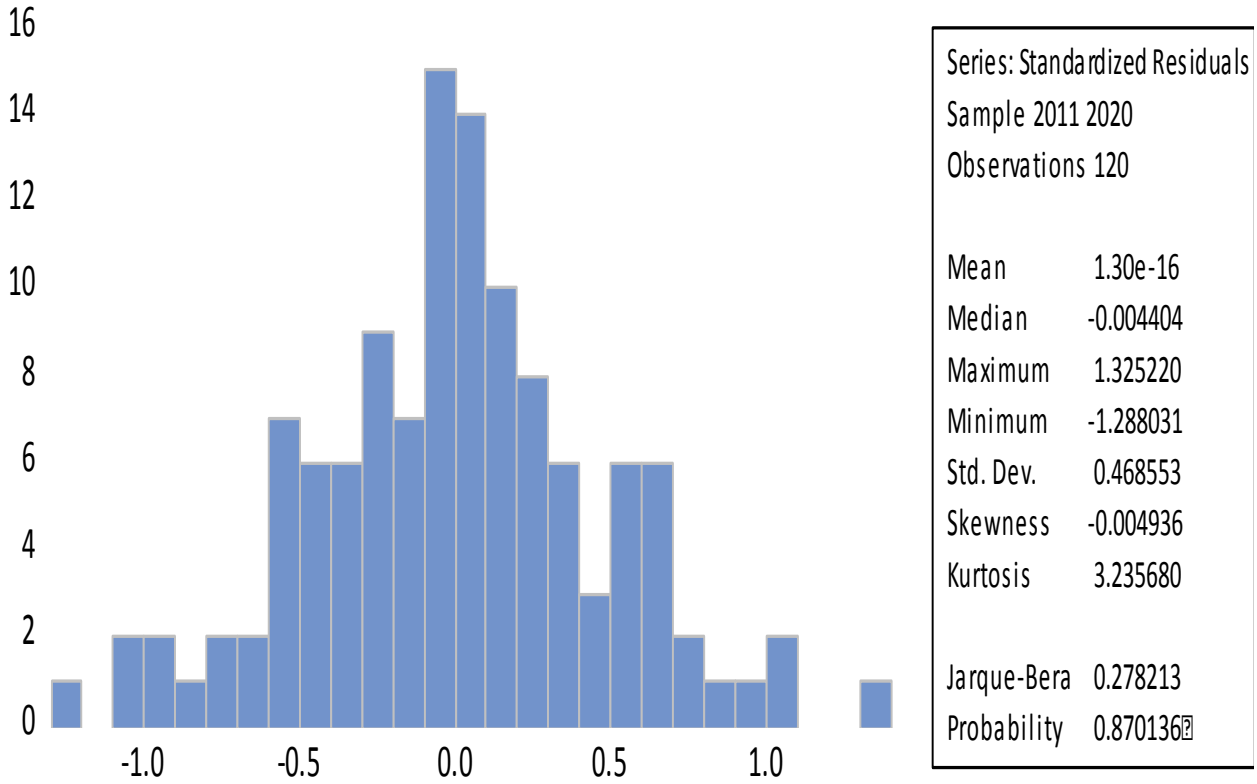
4.3.3 Test for Normality assumption

The assessment of normality of the metric variables involves both empirical measures of a distribution's shape characteristics (skewness and kurtosis) and the normal probability plots(Flazon,2013).

A normal distribution is not skewed and is demarcated to have a coefficient of kurtosis ≈ 3. One of the most commonly applied tests for normality is the Bera–Jarque. The Bera–Jarque normality

tests results can be viewed by selecting View/Residual Diagnostics/Histogram – Normality TestBrooks (2014). 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 Brook (2014).

Table 4.5 Test for Normality assumption



Source: Developed by the researcher through E-views 12

As shown in Table 4.5 the histogram kurtosis is 3.23, and the P- values are shown in the histogram in the appendix (i.e. 0.87). Hence, the hypothesis that normally distributed should not be rejected as the null of normality.

4.3.4 Test for absence of series multi-collinearity assumption

Multi-collinearity problem occurs when the explanatory variables are very highly correlated with each other. Testing for multi-collinearity is unpredictably difficult, and hence all that is presented here is a simple method to examine the presence or otherwise of the most easily detected forms of near multi-collinearity. The method simply contains looking at the matrix of correlations between the individual variables. Hair et al. (2006) supposed that a correlation coefficient below0.9 may not cause serious multi-collineary problems. Cooper & Schindler (2009) also suggested that a correlation coefficient above 0.8 between explanatory variables should be corrected because it is a sign of a multi-collinearity problem. According to Gujrati(2004), suggested rule of thumb is that if the pair-wise or zero-order correlation coefficient between two regressors is high, above 0.8, then multi-collinearity is a serious problem. To put the matter somewhat technically, high zero-order correlations are sufficient but not a necessary condition for the existence of multi-collinearity since they can exist even though the zero-order or simple correlations are relatively low (less than 0.50). As shown in table 4.6 below, in this study the coefficient of the largest one is 0.78. Since the coefficient is less than 0.80, we can conclude there is no series multicolinarity problem as supported with empirical evidence Gujarati(2004), Cooper & Schindler (2009) and Hair et al. (2006).

Table 4.6 Test for absence of series multi-collinearity assumption

Covariance Analysis: Ordinary
Date: 01/05/22 Time: 14:08
Sample: 1 120
Included observations: 120

Correlation	ROA	RESRE	LIQRE	ASEQ	CAPR	MKTRI	MGE	GDP
ROA	1.000000							
RESRE	0.316830	1.000000						
LIQRE	0.412596	0.745431	1.000000					
ASEQ	0.018191	0.085063	0.051701	1.000000				
CAPR	-0.322188	-0.572592	-0.788265	-0.073604	1.000000			
MKTRI	-0.193109	-0.383158	-0.571368	0.031165	0.590250	1.000000		
MGE	0.757415	0.626305	0.715224	0.169969	-0.624868	-0.364519	1.000000	
GDP	0.242561	0.485814	0.533503	0.070271	-0.578342	-0.580697	0.509959	1.000000

Source: Developed by the researcher through E-views 12

Some authors, use the VIF (variance inflation factor) as an indicator of multi-collinearity. The larger the value of VIF, if the VIF of a variable exceeds 10, that variable causes a serious multi-colinary problem.

Table 4.7 Test for Variance Inflation Factor

Variance Inflation Factors
Date: 01/05/22 Time: 14:12
Sample: 1 120
Included observations: 120

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
RESRE	0.000162	8.230887	2.434863
LIQRE	3.95E-05	27.16077	4.745999
ASEQ	0.005541	4.015637	1.048380
CAPR	0.048550	228.0597	3.073673
MKTRI	0.006049	33.73452	1.931833
MGE	1.99E-06	12.07864	2.369954
GDP	0.001662	73.63422	1.911676
C	0.914667	470.5422	NA

Source: Developed by the researcher through E-views 12

As shown below table 4.7 VIF (variance inflation factor) maximum is 3.95 which is below 10 thus the regression models have no multicolinearity problem as supported with empirical evidence of Gujarati (2004)

4.4 Random Effect (RE) Versus Fixed Effect (FE) Models

The two commonly used estimating regression models based on panel data are Random Effect and Fixed Effect Models (Gujrat, 2004). There are broadly two classes of panel estimator approaches that can be employed in financial research: fixed-effect models and random-effect models (Brook, 2014).

The Hausman test can be used to decide between fixed-effect models and random-effect models.

Table 4.8 Hausman Test

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

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14.836178	7	0.0382

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
RESRE	-0.011456	-0.019028	0.000021	0.0987
LIQRE	-0.011775	-0.007999	0.000002	0.0034
ASEQ	-0.223872	-0.190344	0.001618	0.4046
CAPR	0.897617	0.560918	0.019810	0.0167
MKTRI	-0.133293	-0.102204	0.004335	0.6368
MGE	0.021457	0.019391	0.000001	0.0407
GDP	-0.051156	-0.061658	0.000073	0.2185

Cross-section random effects test equation:
Dependent Variable: ROA
Method: Panel Least Squares
Date: 01/05/22 Time: 14:27
Sample: 2011 2020
Periods included: 10
Cross-sections included: 12
Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.238124	1.044892	-0.227893	0.8202
RESRE	-0.011456	0.012685	-0.903120	0.3686
LIQRE	-0.011775	0.005823	-2.022281	0.0458
ASEQ	-0.223872	0.085426	-2.620639	0.0101
CAPR	0.897617	0.267187	3.359512	0.0011
MKTRI	-0.133293	0.106257	-1.254439	0.2126
MGE	0.021457	0.001779	12.06299	0.0000
GDP	-0.051156	0.037719	-1.356247	0.1780

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.763652	Mean dependent var	2.937239
Adjusted R-squared	0.721531	S.D. dependent var	0.801446
S.E. of regression	0.422925	Akaike info criterion	1.261051
Sum squared resid	18.06541	Schwarz criterion	1.702404
Log likelihood	-56.66306	Hannan-Quinn criter.	1.440286
F-statistic	18.12978	Durbin-Watson stat	1.410239
Prob(F-statistic)	0.000000		

Source: Developed by the researcher through E-views 12

As shown in Table 4.8 the Hausman specification test for this study has a p-value of 0.0382 for the regression models. This indicates that the p-value is significant and the null hypothesis is rejected justifying as the fixed-effect model is appropriate for the given data used in this study

4.5 The regression analysis result on the effect of Bank regulation

Under the following regression outputs, R square values indicate the explanatory power of the model and in this study adjusted R square value which takes into account the loss of degrees of freedom related to the addition of extra variables were inferred to see the explanatory powers of the models. P-value shows at what percentage or precession level of each variable is significant.

The beta coefficient may show a negative or positive sign; beta specifies each variable's level of influence on the dependent variable. P-value indicates at what percentage or precession level of each variable is significant (Brooks, 2014).

Operational model: the operational panel regression model used to measure bank regulation factors that affect private commercial banks' financial performance found in Ethiopia. Measured by ROA was:

$$ROA_{it}=\beta 0+\beta 1 RESRE_{it}+\beta 2 LIQRE_{it}+\beta 3\ ASEQ_{it}+\beta 4\ CAPR_{it}+\beta 5\ MKTRI_{it}+\beta 6\ MGE_{it}+\beta 7\ GDP_{it}+\varepsilon_{it}$$

Table 4.9 Effect of Bank Regulation Results- Fixed Effect (FE) Models

Dependent Variable: ROA
Method: Panel EGLS (Cross-section weights)
Date: 01/05/22 Time: 14:28
Sample: 2011 2020
Periods included: 10
Cross-sections included: 12
Total panel (balanced) observations: 120
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESRE	-0.017142	0.010042	-1.707000	0.0909
LIQRE	-0.007686	0.005073	-1.515051	0.1329
ASEQ	-0.123315	0.084326	-1.462350	0.1467
CAPR	0.752519	0.237531	3.168084	0.0020
MKTRI	-0.026145	0.084550	-0.309230	0.7578
MGE	0.020325	0.001634	12.44027	0.0000
GDP	-0.041413	0.029291	-1.413843	0.1605
C	-0.315203	0.876636	-0.359559	0.7199

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.796733	Mean dependent var	3.504631
Adjusted R-squared	0.760507	S.D. dependent var	1.393128
S.E. of regression	0.415170	Sum squared resid	17.40897
F-statistic	21.99348	Durbin-Watson stat	1.661268
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.756703	Mean dependent var	2.937239
Sum squared resid	18.59655	Durbin-Watson stat	1.443499

Source: Developed by the researcher through E-views 12

Table 4.9 shows the results of Return on Asset (ROA) as the dependent variable and the independent variables namely bank regulation variables, bank-specific variables, and macroeconomic explanatory variables for the sample of ten private commercial banks in Ethiopia. The descriptive power of this model is high (around 80 %). This implies that around 80% of the variability in the financial performance of commercial banks in Ethiopia can be explained by the change in the regulatory and explanatory variables included in the model. The remaining 20 percent of the variation in the performance of private banks is explained by other variables which are not included in the model. Thus, these explanatory variables together, are better explanatory variables of the financial performance of private commercial banks in Ethiopia.

4.5.1 Bank Regulation Variables

4.5.1.1 Reserve requirement (RESRE)

The higher the required reserve ratio, the lower the amount of funds available to the banks, overall an increase in reserve requirements affects banks' ability to make loans and decreases possible bank profits because the central bank pays no interest on reserves Casu, Girardone&Molyneux (2006).

As per the regression results, the reserve requirement ratio (RESRE) a coefficient estimate showed -0.017142 and the p-value of RESRE was 0.0909 which means reserve requirement had a negative relationship with performance disclose, that it is statistically significant at 10% level of significance. which means that the reserve requirement ratio does affect the financial performance of private commercial banks in Ethiopia at 10% level of static significance. This result suggests that the increase in legal reserve requirement leads to decreases performance.

The finding was consistent with previous studies by Eden(2014), Addisu(2017) and inconsistent with Anteneh (2014), and Tekalign (2020).

4.5.1.2 Minimum Capital Requirement (CAPR)

According to the regression result, the Minimum Capital Requirement (CAPR) coefficient of the estimate was 0.752519 and the probability was 0.0020, which means minimum capital requirement had a positive relationship with performance disclosing that it is statistically significant at a 5% level of significance. This means that the Minimum Capital Requirement (CAPR) ratio does affect the financial performance of private commercial banks in Ethiopia at a 5% level of significance.

Consistent with Chortareasa, Girardone&Ventouric (2012) Addisu (2017) and inconsistent with Tekalign (2020).

4.5.1.3 Management Efficiency (MGE)

From the regression result, the Management Efficiency (MGE) coefficient of the estimate was 0.020325 and probability was 0.0000, which means Management Efficiency had a positive relationship with performance disclosing that it is statistically significant at a 1% level of significance. This means that the Bank's performance rises by increasing non-interest income and by controlling noninterest expense**.** The result was consistent with Javaid&Alalawi (2018).

Table 4.10 Summary of expected and actual signs ofsignificant variables on dependant variable

Variables	**Expected Signs**	**Actual Signs**
Reserve requirement	Negative and significant	Negative and significant
Minimum capital requirement	Positive and significant	Positive and significant
Management efficiency	Positive and significant	Positive and significant

Chapter Five

5 Conclusion and Recommendation

In the previous sections, the collected data were analyzed and results & discussions were presented. While this section deals with a summary, conclusions, and recommendations based on the result of the study. This chapter is organized into three subcategories.

5.1 Summary

The aim of this study is to examine the effect of bank regulation on the financial performance of private banks in Ethiopia. The study utilized ten consecutive years (2011 to 2020) of data from selected 12 private commercial banks found in Ethiopia. To achieve the objectives, the study used liquidity requirement ratio, reserve requirement ratio, minimum capital requirement, and Asset quality to represent bank regulation. Market risk and Management efficiency represent Bank specific and macroeconomic represented by the Real GDP Growth rate. Return on Asset (ROA) was used to stand for private commercial banks' financial performance.

The data was presented by using a descriptive statistic, correlation analysis, balanced panel regression model based on OLS, and fixed effects model of the secondary data obtained from the audited annual report of sampled commercial private banks in Ethiopia. Before achieving OLS regression, the models were tested for the classical linear regression model assumptions.

From the regression result, capital requirement and management efficiency had a positive and statistically significant effect on the performance of private commercial banks. Reserve requirements had a negative and statistically significant effect on the performance of private commercial banks. Liquidity requirement, asset quality, market risk, and real GDP growth rate had a negative and statistically insignificant effect on the performance of private commercial banks in Ethiopia and the results of the models enable us to make the following conclusions.

5.2 Conclusions

- The result showed that reserve requirement had a negative and significant effect on the performance of private commercial banks. This implies that when banks increase the amount of legal reserve it leads to a decrease in their performance which means increasing the reserve requirement reduces the amount of money that banks have available to lend.

- Liquidity requirement had a negative and insignificant effect on the performance of private commercial banks in Ethiopia. This implies that at the time of this study most private commercial banks are more liquid and not sensitive to the regulation organ (NBE) requirement regulation and do not affect the performance.

- Asset quality had a negative and statistically insignificant effect on the performance of commercial banks in Ethiopia. This showed that at the time of this study asset quality of private commercial banks in Ethiopia is in a good situation, it indicates a strong asset quality and minimal portfolio risks and maintains low loan loss provision. Because of that not affect the performance during the study period.

- Minimum capital requirement had a positive and statistically significant effect on the performance of private commercial banks of Ethiopia. This implies that paid-up capital and performance had a direct and positive relationship. As a bank increases, paid-up capital increases its competitiveness and performance.

- Market risk had a negative and statically insignificant effect on the performance of private commercial banks in Ethiopia. This showed that at the time of the study period the private Bank's appetites were very low to pay more interest to depositors because the competition between themselves was very low. Even for saving depositors, the private banks pay them on a monthly basis (The money must be deposited for the full month even a deposit made by the second day of the month will gain interest; it has to wait till the next month), not in daily bases.

- Management efficiency had a positive and statically significant effect on the performance of private commercial banks in Ethiopia. This implies that management efficiency increases the

performance of the banks and also increases by controlling noninterest expenses and gaining more non-interest income.

- Real GDP growth rate had a negative and statistically insignificant effect on the performance of private commercial Banks of Ethiopia; this implies that private commercial banks in Ethiopia were price makers, not takers, they increase the collection of commission and interest income when a change occurs in a country's GDP.

5.3 Recommendations

Ethiopia is a developing country and needs well-functioning banks. A poorly functioning banking system hinders economic progress, aggravates poverty, and destabilizes economies. So, it is essential to monitor banks with appropriate regulations to assure the safety, health, and soundness of the financial system.

As observed in the study the reserve requirement had a negative and statistically significant effect on the financial performance of private commercial banks. NBE should amend the requirement to enhance private commercial banks, and before applying the regulation NBE should use sufficient studies.

Asset quality is a typical indicator of financial health. Deteriorating the quality of assets is an indicator of a banking system problem. Asset quality of private commercial banks in Ethiopia is in a good situation; So, it must keep on the banks' practice and continues its monitoring.

The Liquidity position determines how well liquid is to cover immediate disturbance to the financial health of the bank, and increasing the liquidity position leads to an increase in the performance of private commercial banks because the bank more liquid lends more money to the borrowers. Therefore, it is recommended that private commercial banks enhance deposit mobilization differently from the normal practice.

The private commercial banks must raise their paid-up capital for expanding the market share, grow competitiveness & performance, and absorb unexpected risks.

I also recommend that further research works should be conducted as, in this study, not all bank-specific variables were included.

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