DETERMINANTS OF FINANCIAL PERFORMANCES OF PRIVATE BANKING IN ETHIOPIA: EMPHASIS AT ALL PRIVATE COMMERCIAL BANKS

By

MULUGETA MESFIN MELESE

A THESIS SUBMITTED TO COLLEGE OF BUSINESS AND ECONOMICS, DEPARTMENT OF MANAGEMENT OF WOLKITE UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF ARTS IN BUSINESS ADMINISTRATION

JUNE, 2018

WOLKITE, ETHIOPIA

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Declaration

I, Mulugeta Mesfin Melese, declare that this study **"Determinants of Performances financial performances of Private Banking in Ethiopia: Emphasis at all Private Commercial Banks**" is my original work and has not been presented for a degree in any other university, and that all sources of materials used for the study have been duly acknowledged.

By: Mulugeta Mesfin Melese

Sign_____

Date_____

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ADVISORS' APPROVAL SHEET

This is to certify that the thesis entitled "Determinants of Financial Performances of Private Banking in Ethiopia: Emphasis at all Private Commercial Banks" submitted in Partial Fulfillment of the Requirements for the Degree of Masters of Arts in Business Administration, the graduate program of the Department of Management, and has been carried out by Mulugeta Mesfin Melese Id,No. GSE/050/08 , under my supervision. To the best of my knowledge, is an original work and not submitted earlier for any degree either at this university or any other university.

Therefore, I recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department.

Zerihun Ayenew (Ph.D)	_____	_____
Major -Advisor	Signature	Date
Samuel Gemechu (MBA)	_____	_____
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EXAMINORS' APPROVAL SHEET

We, the undersigned, members of the Board of Examiners of the final open defense by Mulugeta Mesfin Melese have read and evaluated his thesis entitled "Determinants of Financial Performances of Private Banking in Ethiopia: Emphasis at all Private Commercial Banks" , and examined the candidate. This is, therefore, to certify that the thesis has been accepted in Partial Fulfillment of the Requirements for the Degree of Masters of Arts in Business Administration.

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Name of External Examiner	Signature
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Final Approval and acceptance of the thesis is contingent upon the submission of the final copy of the thesis to the School of Graduate Studies (SGS) through the department/school graduate committee (DGC/SGC) of the candidate's department.

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ACRONYMS

AB	Abay BAnk
AdIB	Addis International Bank
AIB	Awash International Bank
AQ	Asset Quality
BOA	Bank of Abyssinia
BrIB	Brehan International Bank
BSize	Bank Size
BuIB	Bunna International Bank
CA	Capital Adequacy
CBO	Cooperative Bank of Oromia
CSA	Central Statistics Agency
DB	Dashen Bank
DGB	Debub Global Bank
EA	Earning Ability
EB	Enat Bank
GDP	Gross Domestic Product
LIB	Lion International Bank
LQ	Liquidity
ME	Management Efficiency
NBE	National Bank of Ethiopia
NIB	Nib International Bank
OIB	Oromia International Bank
ROA	Return on Asset
ROE	Return on Equity
SPSS	Statistical Package social science
UB	Unitned Bank
WB	Wogagen Bank
ZB	Zemen Bank

ABSTRACT

The main purpose of this study was to assess the determinants of Performances of Private Commercial Banks in Ethiopia. In order to meet the objectives of the study, a descriptive and relational research design method was employed. The target population of the study comprised all Private Commercial Banks in Ethiopia that were selected through census sampling method. Whereas, the study period 2010-2016 was purposively selected. Financial statements, during the study period, of private banks were obtained from NBE. These financial statements were then used to generate panel data, which comprises all the financial ratios regarding the dependent variables and bank specific independent variables. Accordingly 101 sample cases of bank specific financial ratios are obtained. Macro economic data for the study period were also collected from NBE and CSA publications. Descriptive analyses of financial ratios were generated to reflect average and relative performance of individual private banks. The overall average financial performances of private banks were 2.61% and 17.96% for ROA and ROE, respectively. Regarding the internal financial ratios, almost all the private banks adhered to the threshold ratios set by the NBE. However, these banks have considerable differences in their internal ratios, where banks in good position regarding one ratio are found to have lower position in another. Mainly, correlation and regression analyses employed in the research revealed profitability of banks were mainly related and influenced by their internal specific bank ratios; whereas the external and macro variables were not found to have significant effect in their performance. Both ROA and ROE had significant negative correlations with CA and ME; while positively related with AQ and BSize. However, the relationships were more stronger for ROE than ROA. Mainly Management efficiency and capital adequacy were the most explanatory to ROA of the banks; together they explained 69% of the variation on the banks return on asset. While, these two ratios together with liquidity and asset quality are determinants to the banks ROE; they have about 75% explanation power. It is therefore, clear that the bank specific ratios have considerably strong influence on profitability of private commercial banks.

Therefore, it is recommended that in order to assess the banks performance with regard to ROA and ROE, it is worth advisable to optimally adjust the CAMEL ratios, while mainly pay regards to the management efficiency and capital adequacy ratios.

Keywords: Financial Performance, Profitability, Return on Asset, Return on Equity, *CAMEL model, Private Banks*

CHAPTER 1: INTRODUCTION

In this chapter, the background of the study, statement of the problem, research questions, objectives of the study, significance of the study, delimitation of the study, and organization of the study have been treated one after the other.

1.1 Background of the Study

Commercial Banks play an important role in the economic development of the any countries. For instance, they allocate resource and channel funds from savers to investors continuously Okoth, (2013). Furthermore, Okoth, (2013) directed that beyond the intermediation function, the financial performance of banks has critical implications for economic growth of countries. Good financial performance rewards the shareholders for their investment.

For the period of the last two decades, the global commercial banking sector has experienced major transformations in its environment, resulting in a significant impact on its performance. Both macro and micro economic factors have been affecting bank performance of the several measures Panayiotis, P. and *et al* (2005).

Regardless of the increased trend toward bank disintermediation in many countries, the role of banks has remained central in financing economic activities in general and different segments of the market. Empirical evidence show that a sound and profitable banking sector is in a better position to withstand negative shocks and contribute to the stability of the financial system. According to Abebaw and Kapur, (2011) the financial system is an important ingredient in any economic environment of a country. Financial intermediaries as a component of the financial system provide a payment mechanism, match supply and demand in the financial markets, deal with complex financial instruments and markets, provide market transparency, and perform risk transfer and risk management functions.

Banks play a vital role in economic development through engaging themselves in an intermediary role which enhances investment and growth. Bashir (2007) observe that commercial banks contribute positively to economic growth by channeling surplus funds to their most productive uses. The literature not only showed the greater function of banks in the

economy but also stressed that without the existence of a sound and efficient banking system, the economy can't function well. When a bank fails, the whole of a nation's payment system is thrown into jeopardy (Ikhide, 2000). On the other front, studies also shown that bank performance also is influenced by the business cycle or economic performance (Dermerguc-Kunt,A. and Huizinga, H., 2001).

The banking system of Ethiopia demonstrates a vital role in contributing to national economy by intermediating between the savers and productive investors. The financial performance of banks affects the interests of depositors, share holders, regulators, potential investors and corporate owners. As banks dominate the financial sector in Ethiopia, ensuring the financial health of these institutions is likely going to ensure the health of the performance of the financial system of the country (Abebaw and Kapur, 2011).

According to Mugume, A. and Appa, C., (2009) discussed that poor bank performance of the various indicators such as interest rate spread, high cost of financial intermediation, credit risk and inefficient and non-competitive financial systems are features of underdeveloped banking system. High and inflexible interest spreads are indicative of a lack of competition, limited financial sector deepening, the existence of perceived market risks, scale diseconomies and regulatory constraints.

Today, the bank performance has become a favorite subject for many stakeholders such as customers, investors, government and the general public. A stable and efficient financial system represents efficient allocation of resources and becomes the foundation of rising of financial performance of an organization which leads to achieve their ultimate objectives (Raza et al, 2011).

Furthermore, Iqbal, (2012) stated Banks' regulatory authorities are directly liable to evaluate the performance of each banking business and they should have to sense any future challenges regarding the performance of all banks. Therefore, beside asked for specific statements highlighting the performance of financial operation for evaluating banking industry, onsite inspection and critical studies are required to find out the accuracy and to judge on the stand of their performance.

Thus, this study was remained to investigate the determinants of performances of private banking sector in Ethiopia's and identifies key internal and external variables that influence the performance of private banking in Ethiopia.

1.2. Statement of the Problem

Financial sector is considered to be the main contributor to economic development. As banks is one of the key financial sectors so the strong and profitable banks leads to economic growth of country. The growing importance of bank's performance make the regulators, bank management, researchers, educational institutes, to take significant interest to examine the determinants of banks performance (Athanasoglou *et al*., 2005; Said,2013). So that they can appraise the banks performance in term of profit and regulate the regime policies, financial plans decision to reach the desired goals and choices of depositor (Pasiouras & Kosmidou, 2007; Ali, 2010).

It is fundamental for the banking industry to develop safe, efficient and reliable infrastructure that enhance the effectiveness of monetary policy and broad access of financial services to the public. The banking sector is an indispensable financial service sector supporting development plans through intermediating flow of funds from those who have surplus capital to deficit units and supporting financial and economic government policies. Through loans and investments, banks promote economic development, job creation, and easy transfer of funds between individuals or businesses. Banks are, in effect, a community's economic engine (Hoenig, 2010).

A single bank is highly connected with other banks for payment system and/or other various function. The failure of a single bank not only affects sits shareholders and depositors rather it also affects the performance of other banks and the whole economy of the country.

Profitability is critical for a bank to maintain continuing activity, for its shareholders to acquire fair returns, and for supervisors as it guarantees to make sound decision, even in the context of a riskier business environment. Profitability is a shock absorber against unexpected losses due to the fact that it strengthens its capital position and improves future profitability through the investment of retained earnings.

Earnings are the vital requirement for survival in a competitive banking institution. Since the basic intend of every bank management is to maximize profit, understanding the real factors that

affect the banks performance should be known by a concerned body. Besides making profit, a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. Harker and Zenios (1998) report shows that the bank performance is a function of its strategic choices, strategy execution, quality of services, and the environment. Accordingly, profitability difference for those banks operating in similar macroeconomic environment can be assured through the success of their competitive strategies and other managerial procedure. Comparative advantages, therefore, may arise from the bank's size, asset growth, and risk management quality, market share, ownership structure, and concentration directory. Thus, these explanatory variables of banks' performance should be extracted in empirical researches. That is why the determinants of bank financial performance have attracted the interest of academic research as well as of bank management, and bank supervisors.

In this paper, bank performance, in view of profitability, is measured by Return on Asset and Return on Equity. Based on previous studies on the area, internal factors and external factors variables such as, capital adequacy, management efficiency, liquidity management, asset quality, earning ability, bank size, Gdp and inflation are incorporated.

For all the aforementioned reasons, like limited stock of knowledge on determinants of bank profitability, the lack of consensus in the banking literature on the factors that affect bank profitability, this study contributes its share to the literature in general and the development and growth of the banking sector of Ethiopia in particular by identifying the key factors that affect the financial performance of Ethiopian private commercial banks. So the purpose of this paper is to investigate the effect of internal and external factors on Ethiopia's private banks financial performance.

1.3. Research Questions

The study tries to answer the following basic questions:

- Is there a relationship between Internal Factors (CAMEL ratios) and ROA?
- Is there a relationship between Internal Factors (CAMEL ratios) and ROE?
- Is there a relationship between External Variables and ROA?
- Is there a relationship between External Variables and ROE?
- Which variables have significant impact on the performance of private banking in Ethiopia?

1.4 General Objective

The general objective of this study is to examine the determinants of private banking performance in Ethiopia.

1.5. Specific Objectives of the Study

The study will attempt:

- To examine the relationship between bank specific ratios and ROA.
- To examine the relationship between bank specific ratios and ROE.
- To examine the relationship between macro/external variables and ROA.
- To examine the relationship between macro/external variables and ROE.
- To evaluate the impact of internal and external variable on bank profitability.
- To identify which variables have significant impact on the performance of private banking in Ethiopia.

1.6. Significance of the Study

The banking sector is increasingly growing and it has witnessed a huge flow of investment. The emergence of private banks in Ethiopia serves as backbone to the financial sector, which have significant role to facilitate the proper utilization of financial resources of a country. In addition to simply being involved in the financial intermediation activities, banks are operating in a rapidly innovating industry that urges them to create more specialized financial services to better satisfy the changing needs of their customers, while ensuring their performance in terms of profitability.

Hence, banks are supposed to have clear understanding on factors that have significant influence in their performance. This study will, therefore, has significant importance in identifying the most common determinants of performance of privet banks in Ethiopia; and encourages the banks managers, employees and stockholders in order to know the most common determinants of privates banking performance.

To cope with the complexity and of risk exposure to banking system properly, it is of great importance for the private banks to evaluate their overall performance of banks by implementing a regulatory banking supervision framework. This study has provide valuable information on the current performance of the banks by which they can make sound decisions with regard to their strategic operations.

The study has also provide comparative information among the banks, there by private banks could evaluate themselves along with other banks status of performance. Which also provides information on the overall status of the private banks, where by government, NBE, and other concerned/interested may have clear picture on the status of the banking industry in Ethiopia.
Thus, this study is hoped to provide useful information for stakeholders to make better investment decisions and to help banks to mark and re-evaluate their performance based on the performance measurement used in the study.

Finally, the study, with its empirical findings, also helps other researchers as an alternate source of reference who want to conduct further study in similar research undertakings.

1.7. Scope of the Study

The scope of the study was limited to determinants of private banking performance in Ethiopia. Therefore, to construct the study manageable and to examine the issue in detail the research was also limited to conduct data from private commercial banks by analyzing their financial reports for the years 2010-2016.

The study was comprised in all the sixteen private commercial banks currently operating in the country, provided that yearly financial report data are available. Depending on their years of establishment, at most the recent seven years of data for each private bank was used in this research except Debub Global bank and Enat banks. The private banks are: Awash international bank, Abyssinia bank, Wogagen bank, Dashen bank, United bank, Nib international bank, Lion international bank, Buna international bank, Brehan international bank, Abay bank, Zemen bank, Oromiya international bank, Cooperative bank of oromiya, Debub Global bank, Enat banks, and Addis international bank.

1.8 Limitation of the Study

The scope of the study is confined to all banks registered in Ethiopia as commercial banks within the study period. Performance of banks can be expressed in terms of competition, concentration, efficiency, productivity and profitability, but in this study performance is defined as profitability. Therefore, measuring performance (profitability) is delimited to two indicators- return on asset and return on equity and eight variables. The reason for the restriction of variables to eight is that the focus of most literatures lays on them and the availability of data. for instance, the study excludes credit risk due to confidentiality of data on non performing loan or provision for loan loss.

1.9. Organization of the Paper

This study has been organized into five chapters. In the first Chapter, Introduction, background of the study , statement of the problem, research questions, objectives of the study, significance of the study, and delimitation of the study were included. In the second Chapter relevant review of the related literature was incorporated. The third Chapter presented methodology which included design of the study, data sources, sample population and sampling technique, instruments of data collection, procedures of data collection, and data analysis. The fourth Chapter dealt with presentation, analysis, and interpretation of data. The last Chapter incorporated the summary of major findings, conclusions, and recommendations

CHAPTER 2: REVIEW OF RELATED LITERATURE

2.1. Theoretical Framework

A healthy and vibrant economy requires a financial system that moves funds from people who save to people who have productive investment opportunities. The financial system is complex in both structure and function throughout the world. It includes many different types of institutions': banks, insurance companies, mutual funds, stock and bond markets, etc.

According to Spong (2000), efficiency and competition are closely linked. In a competitive banking system, banks must operate efficiently and utilize their resources wisely if they are to keep their customers and remain in business. As, Zerayehu (2013) also argued that survival in today's competitive environment totally depends on performance and growth. Competition has implications for efficiency, innovation, pricing, availability of choice, consumer welfare, and the allocation of resources in the economy.

2.1.1 Bank Financial performance measures

According to literatures, bank performance studies have been started in the late 1980s and/or early 1990s. These studies revolve on different theories. For instance, the signaling theory, which elaborates the relationship between capital and profitability, suggests that higher capital is a positive signal to the market of the value of bank (Berger, 1995).

By the same token, a lower leverage indicates that banks perform better than their competitors who can't raise their equity without further deteriorating the profitability (Ommeren, 2011). Bankruptcy cost hypothesis on the other hand, argues that in case where bankruptcy costs are unexpectedly high , a bank holds more equity to avoid period of distress (Berger,1995). Hence, both the signaling theory and bankruptcy cost hypothesis support the existence of a positive relationship between capital and profitability. However, the risk-return hypothesis suggests that increasing risks, by increasing leverage of the firm, leads to higher expected return (profitability) on one hand and it will definitely reduce the equity to asset ratio (represented by capital) on the other hand. Thus, risk-return hypothesis predicts a negative relationship between capital and profitability (Obamuyi, 2013).

2.1.2 Determinants of Financial performance

Capital Adequacy

The National Bank of Ethiopia has set specific measure of the capital adequacy position of Banks, which is the ratio the Capital Adequacy Ratio (CAR) (Directive No SBB/9/95). The directive visibly set out the computation mechanism and the conversion factors for both on and off-balance sheet items and strictly set for all banks not to maintain their capital level below 8% of their risk weighted assets. Regardless of such regulatory framework, the major intention of holding capital is to build the internal strength of the bank to withstand losses during crisis (Dang (2011). However some authors argue that capital also affects performance via creating liquidity, hence banks with strong capital position are able to reduce their financing costs, for example by paying low interest rates on their debt(Diamond, 2000). However, holding high capital level is not without drawbacks: a higher CAR ratio reduces the ROE due to two mechanisms: A high ratio indicates a lower risk, and the theory of markets to balance advocating a strong relationship at risk and profitability would lead us to infer a lower profitability.

Capital adequacy reflects the capital strength or capital structure of a bank. It is one of the bank specific factors that influence the level of bank profitability. Strong capital adequacy ratio shows the internal strength of the bank to withstand losses during crisis and it increases safety for depositors during unstable macroeconomic conditions. Some theories suggest that higher capital ratio of banks introduces a strong attraction to monitor borrowers and invest in safer assets, and therefore reduces the probability of default. Demirguc-Kunt and Huizinga (1999) found a positive relationship between bank performance and capitalization, while Naceur and Goaied (2008) reported high NIM and profitability to be associated with banks with a relatively high amount of capital.

Garcia-Herrero (2009) showed better capitalized banks tended to be more profitable, while Beltratti and Stulz (2009) found that large banks with more Tier-1 capital and more deposit financing revealed significantly higher returns during crisis. Athanasoglou *et al*. (2008) demonstrated that capital is important in explaining bank profitability. Naceur and Omran (2011) found that bank-specific characteristics, particularly bank capitalization and credit risk, have positive and significant impacts on banks' net interest margin, cost efficiency, and profitability.

Berger and Bouwman (2013) found that capital helped small banks to increase their probability of survival and market share at all times (during banking crises, market crises, and normal times) while capital enhanced the performance of medium and large banks mainly during banking crises. Large size of equity is expected to reduce the bank risk and increases a bank's creditworthiness in reducing its funding cost for a bank with higher equity to assets ratios will normally have a lower need of external funding. However, lower capital ratios in banking imply higher leverage and risk, which therefore lead to greater borrowing costs.

Capital Adequacy Ratio variable is included in the regressions to examine the link between profitability and bank capitalization (Dietricha and Wanzenriedb, 2009). Most literatures results show that it has positive relationship with profitability (Rao & Tekeste, 2012; Ameur and Mhiri, 2013; Ongore and Gemechu, 2013; Athanasoglou, *et al*., 2005; and Sufian and Chong, 2008. On the contrary, some like Ayanda, A. M., Christopher, I and Mudashiru, M.A. (2013)

Asset Quality

The asset side of a Bank's balance sheet is another bank specific variable that affects the profitability of a bank. Even if the total package of the Bank's asset consist of various asset components such as cash, deposit with banks including reserves at the NBE, loans, investments, fixed assets etc, there seems an agreement to focus on the quality of the loan portfolio. This seems due to the large size of loans in the Banks balance sheet which mainly emanated from the inherited intermediation activity of banks. In addition, more often bank loan of a bank is the major asset that generates the major share of the banks income. Hence the quality of loan portfolio determines the profitability of banks.

The highest risk facing a bank is the losses derived from delinquent loans and it's highly affects the performance of Banks (Dang, 2011). As, Liu and Wilson (2010) find that a deterioration of the credit quality reduces the ROA and ROE. Asset quality and both credit and liquidity risks are closely related to each other. Asset quality reflects the quantity of existing and potential credit risks associated with loan and investment portfolios and other assets, as well as off-balance sheet transactions. Poor quality of the loan assets slowed down banks to expand more credit to the domestic economy, thereby adversely affecting economic performance. In addition, strong competition among banks erodes margins. In order to compensate for declining profitability, bank managers might increase loan growth with quality of their loan portfolios. Hawtrey (2009)

argued that the Australian banks resilience is because of higher loan quality resulting from responsible lending practices.

Management Efficiency

According to Ongore 2013, Management Efficiency is one of the key internal factors that determine the bank profitability but appears to be one of the complexes subject to capture with financial ratios. However, different authors try to use financial ratios of the financial statements to act as a proxy for management efficiency. One of these ratios used to measure management quality is operating profit to income ratio (Rahman, 2009; Sangmi and Nazir, 2010). However, some used the ratio of costs to total assets (Nassreddine, 2013). In whatever way the argument goes measuring the management efficiency requires to get deep into evaluation of the management systems, organizational discipline, control systems, quality of staff, and others. In the Ethiopian context the regulatory organ considers all the aforesaid variables. Hence, a single quantitative measure of the management performance is not set.

During the last two decades, a large number of bank failures occurred. The empirical literature identified that a large proportion of non-performing loans and a low level of cost efficiency were the two main reasons of these failures. The fundamental dispute is that bad management increases the probability of bank failures. The bad management hypothesis forecasts that cost efficiency exerts an impact on non-performing loans, as bad managers do not monitor loan portfolios efficiently. According to the bad management hypothesis, low efficiency is a signal of poor managerial performance, which also affects loan lending behavior. Efficient cost management is a precondition for the improved efficiency of the banking system and that banks have much to gain if they improve their managerial practices.

Williams (2004) studied a large sample of European savings banks using 1990- 8 data. He found that decreases in cost and profit efficiency tend to be followed by deteriorations in loan quality, which support the bad management hypothesis. In contrast, Rossi, (2005) showed similar findings to those of Williams but for a longer time period. Goddard, (2013) found managerial efficiency measured as cost-income ratio appears to be a more important determinant of performance than either concentration or market share. Athanasoglou *et al*. (2008) found that operating expenses are negatively and strongly linked to profitability.

Earning Ability

The viability in the future of a bank relies on the ability that the bank could earn for the adequate returns by using its assets. Earning ability enables a bank to increase its funds, expand its capital and keep its competitive position. Earning ability is one of the most important determinants of performance (Atikogullari, 2009). Net interest rate margins could be used to represent the earning ability in the previous studies.

Net Interest Rate Margins (NIM) indicates a key factor of the bank's earning ability. Net interest margin represents the difference between the banks' income of interest received on securities and loans and cost of interest of bank's borrowed capital. It shows the bank's efficiency and cost of intermediation services (Khrawish, 2011). Jha and Hui (2012) found a positive relationship between NIM and ROA.

Liquidity Management

A bank's liquidity is regarded as the ability to fulfill its short-term liability, and maintain its solvency at the same time. Therefore, the bank ought to keep its solvent for new loans requirement and unanticipated drain on deposits. However, overhead liquidity level amount had an adverse effect on the profitability of the bank. The proximate cause of most bank failures is the lack of sufficient liquidity (Golin, 2001). There are three ratios are found to represent the liquidity in previous studies, loans to deposits ratio, liquid assets to deposits ratio, and liquid assets to total assets ratio.

Loans to deposits ratio shows the percentage of loan which has been lent to customer against the deposits that from the other customers. Elyor (2009) found a negative relationship between the loans to deposits ratio and bank performance. Liquid assets to deposits ratio shows the capacity of banks to cover the unanticipated deposits drain. Olweny (2011) found a weak positive relationship between liquid assets to deposits ratio and ROA.

Liquid assets to total assets ratio indicates the ability of a bank to pay its liabilities by using liquid assets. Atikogullari (2009) observed the liquidity condition of the northern Cyprus banking sector for the period of 2001 to 2007 by using liquid assets to total assets ratio.
Liquidity indicates the ability of the bank to meet its financial obligations in a timely and effective manner. There are variations among scholars with regard to the measurement ratios.

The most common financial ratios that reflect the liquidity position of a bank according to Samad (2004) are customer deposit to total asset and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. For instance Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia.

Poor levels of liquidity are major causes of bank failures. During periods of increased uncertainty, financial institutions may decide to diversify their portfolios (improve asset quality) and/ or raise their liquid to reduce risks of banking run. In this respect, risks can be divided into credit and liquidity risk. According to the definition of the Basel Committee on Banking Supervision (1997), liquidity risk arises from the inability of a bank to accommodate decreases in liabilities or to fund increases in assets. Literature on two very important functions of banks - Liquidity creation and Risk transformation - show that these two functions do not move in the same direction.

Deep and Schaefer (2004) constructed a measure of liquidity transformation the "liquidity transformation gap" as the difference of liquid liabilities and liquid assets held by a bank, scaled by total assets on the two hundred largest U.S. banks during 1997-01. They concluded that banks do not appear to create much liquidity. Berger and Bouwman (2009) used data on the U.S. banks over 11 years and found that a relationship between capital and liquidity creation is significantly positive for large banks, but insignificant for medium-sized banks and negative for small banks. Distinguin, Roulet, & Tarazi (2013) found that European and U.S. publicly traded commercial banks decreased their regulatory capital when they created more liquidity, i.e., they funded larger portions of illiquid assets with liquid liabilities. Small banks do actually strengthen their solvency standards when they face higher illiquidity.

According to Shen, (2010) investigated the causes of liquidity risk and the relationship between bank liquidity risk and performance for 12 advanced economies over the period 1994-2006. They found that liquidity risk may lower bank profitability (ROA and ROE) because of higher cost of fund, but increase bank's net interest margins because banks with high levels of illiquid assets in loans may receive higher interest income. Note that this study limited the determinant to one factor, while in our paper, multiple factors were identified.

Bank Size

Bank size is generally considered a relevant determinant of bank performance. Smirlock (1985) finds a positive and significant relationship between size and bank profitability. To capture the relationship between size and bank profitability, we use the log total assets of the banks as a proxy for bank size.

The size of a bank was considered to be a key determinant on its performance or profitability. The economies of scale could enable the big size of banks to decrease the processing costs and other information gathering costs (Boyd and Runkle, 1993).Alkhatib (2012) used logarithm of total assets to indicate the bank size for the Palestinian commercial banks, and he found there was a statistically significant impact of bank size on bank performance.

Obviously, size and performance are closely related to each other inversely since size is a proxy for lower risk. Larger banks are expected to have higher level and variety of loan products than smaller banks, all of which reduce risks of bank. Besides, there are economies of scale from larger size, i.e., reduced risk and economies of scale lead to improved performance. Furthermore, recent financial crisis data revealed that bank size is associated with large risks to public financial activity.

Demirguç-Kunt and Huizinga (2011) distinguished between absolute size as measured by the logarithm of total assets and systemic size as measured by liabilities-to-GDP ratio. They found that banks with large absolute size tended to be more profitable as indicated by the return on assets, whereas banks with large systemic size tended to be less profitable. Pasiouras and Kosmidou (2007) found a negative relationship between size and profitability as did Ben Naceur and Goaied (2008). Goddard, (2004) found only weak evidence for any consistent or systematic size–profitability relationship. Micco,(2007) found there no statistically significant correlation between relative bank size and bank return. Shih, Zhang, and Liu (2007) also found that in China, size is not correlated to bank performance. Cornett, (2010) found that banks of all size groups suffered bank performance decreases and the largest banks faced the largest losses.

GDP Growth

It is easy to assume that the growth in economic activity, measured by GDP, has a positive impact on the performance of banks: a period of high growth leads to higher investment and consumption, which increased the credit, and hence increase the performance of banks.
This is actually the result reached by the majority of authors who have studied this relationship, namely Arpa, Giulini, Ittner & Pauer (2001) and Schwaiger and Liebig (2008). Yet all authors fail to this conclusion. Thus, who study the situation in Europe, find that it is true that in Western Europe, but the zero on the banks of Eastern Europe. In addition Bernanke, B.S., Gertler, M., (1989) find an inverse relationship between GDP growth and performance of banks. One explanation they advance is as follows: in periods of recession, the risk of borrower default increases. To compensate for this increased risk, banks increase interest rates on loans, which improve their performance.

There is no conclusive result on the effect of economic growth on NIM. On the one hand, higher growth signals greater demand for bank loans and the banks could then charge more for their loans. On the other hand, as far as economic growth shows, under increased competition and macroeconomic stability, one can expect a lower spread is associated with stronger growth. Claeys and Vennet (2008) studied the Central and Eastern European countries (CEEC) and found that in the Western European countries, higher economic growth is associated with higher margins, whereas no link is found in the Central Eastern European countries. Kosmidou (2008) and Flamini, V.,Mc Donald, C. and Schumpetor, L., (2009) found that output growth has a positive impact on bank profitability, while Demirguc-Kunt (2003), Sufian (2009), Liu and Wilson (2010), and Tan (2012) found a negative effect.

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In addition, Bernake and Gertler (1989) and Demirguç-Kunt et al. (2004) even find an inverse relationship between GDP growth and performance of banks.One explanation they advance is as follows: in periods of recession, the risk of borrower default increases. To compensate for this increased risk, banks increase interest rates on loans, which improve their performance.

The Inflation

The first author to address the issue of inflation was Revel (1979). He showed that the impact on performance is dependent on the rate of growth in operating expenses: if these expenses are rising faster than inflation, there is a negative impact on performance. If, however, the growth rate is lower, there is a positive impact. Elaborating the model developed by Revel (1979), Perry (1992) refines the analysis by introducing the notion of anticipation: if inflation is fully anticipated, then it can be passed on to prices ex-ante, and this improves the Performance. If, however, it is not anticipated, the costs will rise faster than prices and the impact on performance is negative.

Many other authors have focused on inflation, and found a positive and statistically significant. For example, Bourke (1989), Molyneux and Thornton (1992), Demirguç-Kunt and Huizinga (1999), conclude that inflation has a negative impact on interest margins. Ben Naceur Kandil and offer the following explanation: the main activity of banks (mostly commercial) is lending. The market is therefore based on an offer of credit (provided by banks) and demand (the individuals and companies). Inflation reduces the demand for credit because it increases uncertainty about the future. However, it has been proven that individuals and businesses if their level of risk aversion varies widely showers are uncertainty (ambiguity-aversion). This drop in demand would lead to a decline in lending and therefore a decrease in performance.

Inflation was also another important macroeconomic indictor, which could affect both the revenues and costs of banks. Staikouras and Wood (2003) showed that inflation could have the effects to the changes in interest rates and asset prices. Kosmidou (2008) pointed that inflation had a negative impact on bank profitability.

Empirical studies have shown that the effects of inflation on bank performance depend on whether operating expenses and revenue increase at a higher rate than inflation. In other words, the impacts of inflation on bank profitability depend on whether inflation is fully anticipated. Thus, inflation is one of the main paths through which it is possible to affect the operations and margins of banks through interest rates. Perry (1992) suggested that the effect of inflation on bank performance is positive if the rate of inflation is fully anticipated. This gives them the opportunity to adjust the interest rates accordingly and consequently earn higher profits.

In a study of 80 developed and developing countries, Demirgüç-Kunt and Huizinga (1999) found a positive relationship between inflation and net interest margin. The same result was also found in other studies , like Staikouras and Wood (2004) for European banks, Athanasoglou *et al*. (2008) for Greek banks, and Albertazzi and Gambacorta (2009) for 10 industrialized countries.

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2.4 Conceptual Framework

The conceptual schema of the relation between the independent variables and dependent variable distilled from the literature review is shown on figure 1 below. It assumes that the relationship between the independent variable and dependent variables is linear. The framework will be verified by the findings in this research and a modified framework might be generated upon the test result of research questions

Independent variables Dependent variable

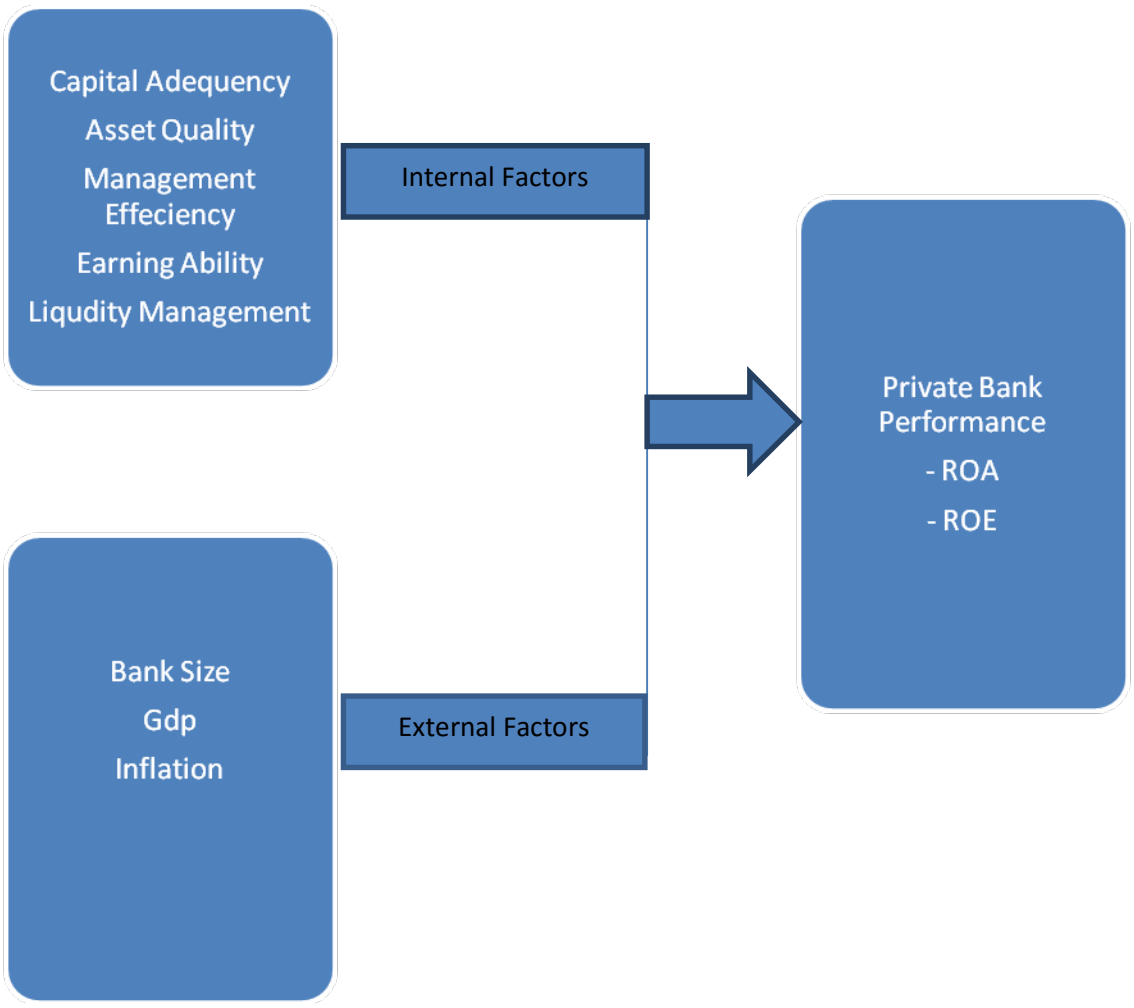

Figure1. Conceptual Framework (Source: Researcher own compilation based on theories).

2.2. Empirical Review

Soundness is a key factor in any financial sector. One of the major measures of economic development and financial growth of a country has been the soundness of its banks and soundness of the banking sector is synonymous with efficiency, productivity, profitability, stability and a shock free environment. Achieving stability in banking sector is only the beginning of a sound banking system. Hence, it is important to measure soundness across various banks in the country, identify the weaker sections of the banking sector. Devise appropriate strategies and policies to lift these sections (Kumar, et al., 2012).

While investigating determinants of bank profitability, identifying similarities and differences across the various economies studied by previous researchers is un -questionable. Needless to say, study on the factors that affect banks' profitability in the developed world has been empirically examined by many authors unlike to that of the developing world. Therefore, the study on this issue especially from the developing world is advisable in order to boost competition and protect adverse effects in the banking sector.

Khrawish (2011) scrutinized Jordanian commercial bank profitability from 2000 through 2010, and categorized the factors affecting profitability into internal and external factors. The author found that there is significant and positive relationship between return on asset (ROA) and the bank size, total liabilities / total assets, total equity total assets, net interest margin and exchange of commercial banks and that there is significant and negative relationship between ROA of the commercial banks and annual growth rate of for gross domestic product and inflation rate.

In addition, Ramadan et al (2011) has investigated 100 observations of 10 banks over the period 2001-2010 by using two measures of bank's profitability: the rate of return on asset (ROA) and the rate of Return on equity (ROE). The research results indicated that the Jordanian bank's characteristics explain a significant part of the variation in bank profitability. In other words, high profitability in the Jordanian banking sector tends to be associated with well capitalized banks, high lending activities, low credit risk, and the efficiency of cost management. The study also showed that size did not support the significant scale of economies for Jordanian banks.

Other further study like Gul et al. (2011) examined the relationship between bank- specific and macro-economic characteristics over bank profitability by using data of top fifteen Pakistani commercial banks over the period 2005-2009. The paper used the Pooled Ordinary Least Squares (POLS) method to investigate the impact of assets, loans, equity, deposits, economic growth, inflation and market capitalization on major profitability indicators that is , return on assets (ROA), return on equity (ROE), return on capital employed (ROCE) and net interest margin (NIM) separately . The empirical results pointed out that the internal and external factors have strong impact on the banks profitability

According to Olweny and Shipho (2011) have tried to conduct to determine the effects of bank specific factors: capital adequacy, Asset quality, operational cost efficiency, and income diversification on the profitability of commercial banks in Kenya. Moreover, they have tried to analyze and evaluated the effects of market structure factors such as foreign ownership and market concentration in the profitability of commercial banks in Kenya. They have adopted an explanatory approach by using panel data research design and annual financial statements of 38 Kenyan commercial banks from 2002 to 2008 were obtained for the purpose of the study from CBK and Banking survey 2009. The data was analyzed using multiple linear regression method. Hence, they have found that all the bank specific factors had a statistically significant impact on profitability, while none of the market factors had a significant impact. Their study recommends policies that would encourage revenue diversification, reduce operational costs, minimize credit risk and encourage banks to minimize their liquidity holdings.

Further study token by Onuonga (2014) has aimed to study the profitability of Kenya's Top Six Commercial Banks over the period 2008-2013. She used generalized least squares method to estimate the impact of bank assets, Capital, deposits, loan and assets quality on banks profitability. She also used return on assets (ROA) on her study as a measure of profitability. As it can be noted from the study, bank size, capital strength, ownership, operations expense, and diversification significantly affect profitability of the top six commercial banks. Her study insisted that the Kenyan government need to set policies that encourage commercial banks to raise their assets and capital base so as to enhance the performance of the banking sector. The

study has also implied that the commercial banks need to invest in technologies and management skills that minimize costs of operation and since the impact is believed to positively impact the growth and survival of the banks.

The effects of bank capital, bank size, expense management, interest income and the economic condition of on bank's profitability in Nigeria has been investigated by Obamuyi (2013). The fixed effects regression model was employed on a panel data obtained from the financial statements of 20 banks from 2006 to 2012. The results indicate that improved bank capital and interest income, as well as efficient expense management and favorable economic condition, contribute to higher banks' performance and growth in Nigeria. As a result, the paper advised the Nigerian government to encourage banks to regularly raise their capital and to create enabling environment that will accelerate economic growth in the country.

Empirical evidence which included in this study are determinants of commercial banks profitability: an empirical study on Ethiopian commercial banks by, Demena (2011), determinants of commercial banks profitability: an empirical review of Ethiopian commercial banks by Belayneh (2011), factors affecting profitability: an empirical study on Ethiopian banking industry by Amdemikael (2012), determinants of commercial banks profitability: an empirical evidence from the commercial banks of Ethiopia by Birhanu (2012), determinants of bank profitability: an empirical study on Ethiopian private commercial banks by Habtamu (2012) Damena (2011) in his study examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks that covers the period 2001- 2010. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on major profitability indicator i.e., ROA. The estimation results showed that all bank-specific determinants, with the exception of saving deposit, significantly affect commercial banks profitability in Ethiopia. Market concentration was also a significant determining factor of profitability. Finally, with 37 regard to macroeconomic variables, only economic growth exhibits a significant relationship with banks profitability.

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The study made by Amdemikael (2012) examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of eight Ethiopian commercial banks that covers the period 2001- 2011. The study adopts a mixed methods research approach by combining documentary analysis and in-depth interviews to investigate the impact of some internal as well as external variables on major profitability indicator i.e., ROA.The findings of the study show that capital strength, income diversification, bank size and gross domestic product have statistically significant and positive relationship with bank‟s profitability. On the other hand, variables like operational efficiency and asset quality have a negative and statistically significant relationship with bank‟s profitability. However, the relationship for liquidity risk, concentration and inflation is found to be statistically insignificant.

Birhanu (2012) examined the determinants of Ethiopian commercial banks profitability. The study applied the balanced panel data of eight Ethiopian commercial banks that covers the period 2001- 2011. The paper used Ordinary Least Square (OLS) technique to investigate the impact of some internal as well as external variables on profitability indicator i.e., ROAA, NIM the finding shows, all bank-specific determinants, with the exception of bank size, expense management and credit risk, affect bank profitability significantly and positively in the anticipated way. However, bank size, expense management and credit risk affect the commercial banks profitability significantly and negatively. In addition to this, no evidence is found in support of the presence 38 of market concentration. Finally, from macro-economic determinants GDP has positive and significant effect on both asset return and interest margin of the bank. But interest rate policy has significant and positive effect only on interest margin.

Habtamu (2012) examined the determinants of Ethiopian private commercial banks profitability. The study applied the balanced panel data of seven Ethiopian commercial banks that covers the period 2002-2011. The finding shows that bank specific factors; capital adequacy, managerial efficiency, bank size and macro-economic factors; level of GDP, and regulation have a strong influence on the profitability of private commercial banks in Ethiopia.

2.3 Literature Gap

In line with the above theoretical as well as empirical review, profitability is important to all business specially for banking industry since the stability of commercial banks depends on their profitability and the whole economy stability of the nation highly related to the stability of commercial banks. It also revealed that banks profitability can be affected by different factors such as bank specific, industry specific and macroeconomic variables. While this study was focused on some of the bank specific and macro-economic factors. Due to the variation of the environment and data included in the analysis the results of various studies differ significantly. However, several researchers identified that there are some common factors which influence profitability of a bank. Summarizing the results from numerous studies, larger bank size, good asset quality, higher proportion of equity capital to asset, greater GDP growth have generally been associated with greater profitability. Various measures of costs are usually negatively correlated with profits. Greater provisions for loan losses, higher liquidity, and more reliance on debt have been lower indicative of lower bank profit. The review of the literature reveals the existence of many gaps of knowledge in respect of the factors affecting bank profitability, particularly in the context of Ethiopia. As per the review of the literature most of the empirical studies that have been conducted with the aim of identifying factors affecting bank profitability belong to European Union and some emerging markets such 39 as Philippines, Malaysia and Tunisia. Moreover, the literature review also reveals the existence of controversial conclusions that results from different studies made so far. Furthermore, so far as the review of the literature discloses, very scanty work has been done with the objective of identifying the determinants of profitability of banks in Sub Sahara Africa in general and Ethiopia in particular. The study of Damena (2011) examined the determinants of commercial banks profitability in Ethiopia. The study of Damena (2011) fails to disclose the knowledge gap that exists in the area as far as it limits its scope only in case of seven commercial banks of the country and also overlooked some

important variables that are untouched in Ethiopian context and significant from the point of view of the theories and previous empirical studies reviewed above.

The study of Demena (2011) also surprisingly fails to include in its sample one of the governments owned commercial bank namely, CBB which have around 106 branches operated throughout the country currently (NBE 2013/14). In addition to this, the study fails to disclose the impact of some very important variables on Ethiopian banks profitability such as efficiency, nonperforming loans and liquidity risk among others. The study of Belayneh (2011) examined the determinants of commercial banks profitability in Ethiopia. The study of Belayneh (2011) also fails to disclose the knowledge gap that exists in the area. In addition to this, the study fails to disclose the impact of some very important variables on that untouched in Ethiopian context such as labor efficiency, funding cost and among others.

The study of Birhanu (2012) and Amdemikael (2012) was good in many aspects when we compare to prior studies that are conducted on the same area but both Birhanu (2012) and Amdemikael (2012) also fails to include some important variables that are not tested and never touched in Ethiopian context like labor efficiency, funding cost, financial sector development, foreign exchange rate among others. To summarize in the context of Ethiopia, the related study conducted by Demena (2011), Belayneh (2011), Birhanu (2012) and Amdemikael (2012) examined the determinants of commercial banks profitability in Ethiopia, even if they tries to identify the impact of some bank specific, industry specific and macro-economic variables accordingly, their study clearly failed to identify most of the factors that affect bank profitability significantly and variables that are not tested and new for Ethiopian banking industry. In general, the lack of sufficient research (based on the researcher best knowledge) on the determinants of bank profitability in the context of Ethiopia and the existence of variables that are not tested in Ethiopian banking industry initiate this study.

2.4. Conceptual Framework

Thoroughly examining the theories discussed above the researcher come up with the following research framework which will be used in this research.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. Design of the Study

The research design is a framework for conducting business research (Malhotra, 2007). Thus it is the basic plan for conducting the data collection and analysis phase. In this study, Correlational research method was used. Creswell (2005) explained that the correlation research method is useful for identifying the type of association, explaining complex relationships of multiple factors that explain an outcome, and predicting an outcome from one or more predictors. In addition to investigating the relationship of the variables, the influence of determinant variable on performance would be undertaken through regression analysis. Creswell (2005) asserted that, regression is used for explaining a relationship among variables you are interested in determining whether one or more variables might influence another variable.

In addition the study has used descriptive and relational research design because there is the intent to investigate the relationship between dependent and independent variables of the study. According to Polit and Hungler (1991), exploratory and descriptive designs focus on the phenomenon of interest and pursues the factors that influence affect, cause or relate to the phenomenon, which according to this study, is to find out whether private banks' performance (ROA, ROE) is influenced by bank specific internal factors (Capital Adequacy, Asset Quality, Management Efficiency, Earning Ability, Liquidity Management) and macroeconomic external factors (Bank Size, Gdp, Inflation). According to Polit and Hungler (1995) descriptive survey is about describing, observing and documenting aspects of a situation as it is naturally. Thus, descriptive survey design was used to assess the determinants on performance at private commercial banks in Ethiopia. The appropriateness of this design for such study was noted by many scholars. For example, Koul (2008) states that descriptive survey design becomes useful particularly where one needs to understand some particular information. Sometimes these are referred to as "co relational" or "observational" studies.

3.2. Data Sources

In this study, both primary and secondary sources were used to gather information about the performance determinants at private commercial banks in Ethiopia.

The primary source was collected from directors and managers, whose are working at the head office of private commercial banks in Addis Ababa as well as National Bank of Ethiopia (NBE) have been included. The NBE informants were provided information on the overall economic growth of the country and their general opinion regarding the performance of private banks. The top managements in the private banks were also provided information regarding their achievements in the industry as well as their contribution to the wider economy. Moreover, they were contributed the overall brief for the study regarding to their banks performance vis-à-vis various financial performance indicators. The primary data was obtained through interview in order to strengthen the data analysis on the secondary data, which is the main data for this research.

The secondary data sources are mainly year-end financial statements of the private banks. The objectives of the study were achieved through the use of secondary data in the form of the annual financial reports of individual banks and macroeconomic data drawn for the period of seven years (2010-2016). Malhotra (2007) defines secondary data as data that have been collected for some purpose other than the problem at hand. The advantages of secondary data lie in the fact that they are easily accessible, relatively inexpensive and quickly obtained. These financial reports were available through the NBE; and/or each bank could provide data concerning all the dependent and independent variables for this study. From the financial data, which is basically bank's balance sheet and income statement, data on total assets, loans and advances, provision for bad debt and total annual overhead expense were used to estimate ratios and coefficients for the internal determinants. For the external determinants, macroeconomic data on Gross Domestic Product (GDP) and inflation were incorporated into the analysis. This seven years time period was selected based on the fact that it offers recent time from series observations.

Moreover, relevant publications at national and international level were consulted as supplement to the available data. For this purpose, the study was to related journals and articles from printed and on-line media.

3.3. Sample Population and the Sampling Technique

I this study census sampling method was used. Therefore, the population study was consisted of 16 private commercial banks operating currently in Ethiopia. The yearly financial performance data for each bank, since their respective establishment year, constitutes the population for the study was used. Because the number of banks is manageable in size, the researcher was attempted to include the entire sixteen banks by obtained yearly data for 2010 – 2016. The researcher was purposively selected yearly data for the years 2010 to 2016. So, each bank was accounted for seven years data. Hence, a total of 16 x 7 = 112 sample data was used for this research. However, since some banks were established after 2010, the actual sample size is less than 112.

3.4. Data Collection Methods

Employing multiple data collection instruments helps the researcher to combine, strengthen and amend some of the inadequacies of the data and for triangulating it (Cress well, 2003). For these facts the researcher was used of structured interview and document analysis (mainly financial reports) for data gathering instruments. In line with this research objective, the researcher was developed series of interview questions that the top management of the private banks and NBE were professionally addressing them. The NBE, however, was the main data source to provided the researcher with the banks' financial statements.

Interview

Structured interview was used when data collected from business development department of each private bank at head office. The reason why structured interview was employed is that the procedure to be used is standardized and generalized the issue under the study have been taken as well as to obtain answers to carefully phrased questions (Koul, 2008). Using this instrument is important to get broad data about the study.

Document Analysis

Document analysis was also used to gather necessary information about the determinants of private banking performance. In addition to the financial reports of the banks, journals, books, and articles were used because they are important sources of data to explore.

3.5. Data Analysis

Different statistical techniques were employed on the basis of the nature of the data collected. Consequently, the data collected from the respondents were analyzed quantitatively and qualitatively. The study was addressed determinants of private banking performance, the relationships between the banks performance with internal and external factors. Hence, the study was used correlation and regression analysis techniques to depict the relationships between dependent and independent variables.

The study was based on linear regression model in the form of:

$$Y = a + b_1x_1 + b_2x_2 + \ldots. + b_nx_n + e$$

That is:

$$ROA = c + b_1CA + b_2AQ + b_3ME + b_4EA + b_5LQ + b_6BSize + b_7Inflation + b_8GDP + e$$

$$ROE = c + b_1CA + b_2AQ + b_3ME + b_4EA + b_5LQ + b_6BSize + b_7Inflation + b_8GDP + e$$

The assumptions in linear regression model (autocollinearity, multicollinearity and normal distribution of error terms) was addressed along with the regression analysis. Moreover descriptive statistics of the dependent and independent variables was performed via of SPSS (Statistical Package social science) to see the actual performances and its trend over the years. Finally, the interpretation of the data analysis and the compilation of information obtained from interview were summarized.

3.6 Test results for the Classical linear regression model Assumptions

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

3.6.1 Test for Autocorrelation

The Durbuin Watson test statistic tests the null hypothesis that the residuals ordinary least – squares regression are not auto correlated against the alternative residuals. The Durbin-Watson statistic ranges in value from 0 to 4. A value near 2 indicates non-Autocorrelation; a value toward 0 indicates positive autocorrelation; a value toward 4 indicates negative autocorrelation.

The Durbin-Watson test statistic value computed for ROA and ROE was 1.511 and 1.409 respectively. As mentioned in the previous chapter to empirically analyze factors affecting bank profitability in Ethiopia 101 panel data observations were used in the model. Moreover, there were 8 regressors and an intercept term in the model. Therefore, the relevant critical values for the test are dL= 1.378, dU = 1.717, i.e., for 101 observations and 8 regressors; then 4 - dU = 4-1.717=2.28; 4 - dL = 4-1.378=2.62. The were below dL it would have been possible to reject the null hypothesis. The were not above the dU value, either. Hence, this doen't lead to accept the null hypothesis either. The Durbin-Watson test statistic of 1.511 and 1.409 are clearly between the dL and dU values that accepting the null hypothesis is preferable than rejecting it.

3.6.2 Test for Normality

One of the ordinary linear regression analysis is the assumption of the residuals normality distribution. Test for normality require checking whether the disturbances are normally distributed or not. Here, the Kolmogorov-Smirnov normality test statistics was computed using the SPSS statistical package. If the residuals are normally distributed, the histogram should be bell-shaped and the Kolmogorov-Smirnov statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level.

As you can see from the normality test result, the Kolmogorov-Smirnov shows a probability of 0.160 for return on asset and a probability of 0.122 for return on equity. The result suggests that data used for the model construction is normal i.e. the data satisfies the assumption of the residuals normality.

Figure 2: Normality test on ROA and ROE regression residuals

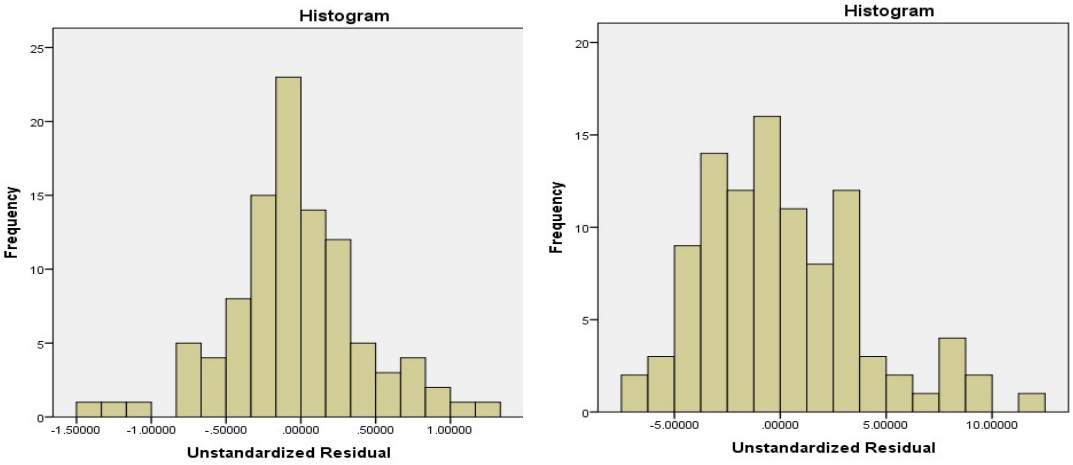


Table 3.1 Tests of Normality for the residuals of ROA and ROE

Unstandardized Residual	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	p-value	Statistic	df	p-value.
ROA	.076	100	.160	.981	100	.158
ROE	.079	100	.122	.964	100	.108

Source: Researcher's Computations on Panel Data (2017)

3.6.3 Test for Multicolliniearity

A correlation matrix used to ensure the correlation between explanatory variables. Cooper & Schindler (2009) suggested that a correlation coefficient above 0.8 between explanatory variables should be corrected for because it is a sign for multicolinearity problem. Mashotra (2007) argued that the correlation coefficient can be 0.75. Lastly, Hair et al. (2006) argued that correlation coefficient below 0.9 may not cause serious multicolliniarty problem. In this research, the correlation matrix table 4.4 exhibited somewhat significant relationship among the explanatory variables. However, none of these correlations are beyond the value 0.75. Hence, the assumption of no (considerable) multicolinearity problem is satisified.

CHAPTER 4: ANALYSIS OF DATA AND PRESENTATION

4.1 Introduction

This chapter presents the description of the data, the analysis tools and techniques used, and the results of the analysis in a format that answers the research objectives. In order to keep the findings in the right perspective thus establishing the determinants of banks' profitability, linear Regression method was used to model the data. Appropriate tables were presented to facilitate the discussion. In order to rationalize the findings of the study, the chapter also discusses the findings in the light of relevant literature.

4.2 Computation of Financial Ratios

In this study the main objective is to assess the relationship and impact of internal (bank specific ratios) and external factors (bank size, inflation and GDP) on private banks profitability, which is measured using return of asset (ROA) and return on (ROE). Secondary data sources of private banks' audited financial statements (balance sheet and income statements) were obtained from National Bank of Ethiopia (NBE). In this research sixteen private banks' financial statements for the years 2010 to 2016 are used.

The banks and their financial data available to this research is explained in the table 4.1 below. The shaded squares represent the available yearly financial statements of banks that were used to generate financial ratios. In total, 101 cases of data is generated for each bank specific variable. The bank specific financial ratios were computed using the formulas presented in Appendix B; and the generated data on financial ratios (CAMEL ratios) are presented in Appendix A.

Table 4.1: sample Private banks and Years of financial statements used

Years of Financial Data	Private Banks Sampled in the Study																Total
	AB	AdIB	AIB	BOA	BrIB	BuIB	CBO	DB	DGB	EB	LIB	NIB	OIB	UB	WB	ZB	
2010																	12
2011																	13
2012																	14
2013																	14
2014																	16
2015																	16
2016																	16
Total	6	5	7	7	7	7	7	7	3	3	7	7	7	7	7	7	**101**

Source: Researcher's Computations on Panel Data (2017)

In addition to the financial ratios, macroeconomic data on GDP annual growth rate were obtained from 2014/15 annual report by NBE, and yearly Inflation is computed from averaging monthly customer price indices by Central statistical Agency (CSA). These were searched from Internet sources.

4.3 Descriptive Analysis

Descriptive analysis shows the mean and standard deviation of the different variables of interest computed from the financial statement of the various banks considered in the study. It also presents the minimum and maximum values of the variables which help in getting a picture about the maximum and minimum values a variable achieved.

Table 4.2: Descriptive statistics of variables

	Mean	Std. Deviation	N	Minimum	Maximum
ROA	2.61	1.05	101	-1.58	5.25
ROE	17.96	8.06	101	-5.87	35.67
CA	16.23	5.54	101	9.08	38.24
AQ	1.45	1.70	101	0.00	8.83
ME	52.76	20.73	100	29.66	193.27
EA	4.34	1.39	101	0.00	8.05
LQ	59.47	8.05	101	40.49	89.12
Bsize	9.68	0.46	101	8.58	10.47
Inflation	13.51	9.18	101	7.30	33.00
GDP	9.72	1.17	101	7.60	11.40

Source: Researcher's Computations on Panel Data (2017)

Table 4.2 above provides a summary of the descriptive statistics of the dependent (ROA and ROE) and explanatory variables, and macroeconomic variables. The statistics present average measures of financial ration for private banks as a whole.

The mean return on asset (ROA) of private banks was 2.61% = 0.0261. ROA shows how the firms have converted its asset into earnings. The higher ratio indicates higher ability and therefore is an indicator of better performance. The value 0.0261 implied that with one-birr of asset that the banks employed was able to generate average earnings of almost 2.61 cents. In short, on average, private banks in Ethiopia are capable of generating 2.61% of their assets in the form of profit. From table 4.3, private banks enjoyed different level of ROA ranging from the least 1.67 (by AB) to the highest 3.88 by ZB, followed by WB and AIB attaining 3.26 and 3.10, respectively. The standard deviation statistics for ROA was 1.05 which indicates that the profitability variation between the selected banks was not as such small, indicating somewhat considerable variation in ROA in the panel data. A negative value in the minimum ROA indicates that at least one of the private banks has attained a negative before tax profit (i.e loss)

over the last six years. The result implies that these banks need to optimize the use of their assets to increase the return on their assets.

The return on equity (ROE) which is also a measure of profitability recorded a mean of 17.96% = 0.1796. The return on equity shows how the banks have performed in using their equity to generate returns. Thus the banks were able to generate an average of about 18 cents for every 1 Birr of equity they employed in their operations. From table 4.3, the top performers are DB and ZB as they attained ROEs 28.64% and 26.5%, respectively. AdIB is found as the least performer bank enjoying only 8.94% roe. The standard deviation of 8.06 in ROE exhibits a considerably high variation among the private banks over the study period.

The variable labeled CA is a measure of capital adequacy, which is calculated as the ratio of equity to total assets. The mean capital adequacy of private banks was 16.23% = 0.1623. This overall ratio satisfies the statutory requirement of the NBE; and even passed the 15% mark signifying that private banks are in strong position with regard to their equity share on their total assets. This indicates the extent to which the banks' equity to absorb any shocks that may happen is 16.23%. AdIB come out as the top achieving 28.47% ratio as its capital adequacy. In contrast, DB is the least performer of all private banks with CA ratio of 10.69%, which is within the satisfactory limit. . These two banks showed somewhat inverse relationship between ROE and CA ratios. That is, one being the top in ROE results in the least with CA while the other being the top in terms of CA. It is the responsibility of a bank to have the confidence of depositors and shareholder. The capital adequacy of a bank by and large shows the financial condition of banks and also the capability of management to assemble the want for additional capital. The overall capital adequacy of private commercial banks in Ethiopia is fairly good as shown in table 4.3.

In terms of earning ability (EA) the overall position of private banks is 4.36% on average, which is beyond the 1.90% statutory requirement and every private banks attained that limit. The excellence of earnings determines the capability of a bank to earn consistently. It mainly determines the profitability and productivity of the bank, explains the growth and sustainability in future earnings capacity. The EA of private banks range from the least value 2.24% and the

highest value of 5.54% representing the position of ZB and CBO, respectively. The earning ability of the fifteen banks is beyond 3% that they perform above satisfactory. However, ZB performs within the satisfactory limit.

The measure of management efficiency, ME, is computed to the value 52.76% = 0.5276. This is the ratio amount that private banks have been expensed they incurred in generating income. The mean value indicates that the banks spent, on average, 52.76% of their income as expenses. It is however required that this ratio falls below the 50% mark; where half of the private banks felt short attaining it. From the table 4.3, DB's management efficiency is computed to the value 40.03% for being the most efficiently managed bank. AIB and ZB are the other banks who achieved better management efficiency compared to others.While AB and BrIB are least efficiently managed banks with 73.90% and 70.27%, respectively.

The ratio of loans to deposit, which is Liquidity ratio (LQ), was 59.47% and this implied that on average 59.47% in proportional terms of money mobilized from customers (deposit) was loan to customer. Managing Liquidity in banks is an important task due to existing competition. The proper liquidity management can be used to avoid/minimize the risk of liquidity and ensuring higher percentage of return on invested funds. The liquidity of private banks ranges from 51.43-69.58. BuIB and AdIB are the top two banks in terms of their liquidity. Whereas, OIB attains relatively the least position of liquidity. In general, The liquidity ratio of private banks have, on average, a higher liquidity position which was somewhat higher than the statutory requirement of 20% for the period under study.

Table 4.3: Average Financial ratio of Banks during 2010-2016

	ROA		ROE		CA		AQ		ME		EA		LQ		Bsize	
Bank Code	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
AB	1.67	16	10.66	14	19.69	5	0.00	2	73.90	16	4.16	10	60.19	5	9.33	12
AdIB	2.40	10	8.94	16	28.47	1	0.62	3	56.18	10	3.25	15	66.38	2	9.05	15
AIB	3.10	3	24.07	3	12.89	12	2.70	15	40.59	2	3.92	12	60.05	6	10.19	2
BOA	2.53	7	22.45	4	11.40	15	2.19	14	46.99	6	4.53	8	56.62	12	10.00	5
BrIB	1.94	15	11.98	12	18.71	6	0.92	7	70.27	15	4.11	11	59.59	8	9.27	14
BuIB	2.16	12	12.19	11	21.41	2	0.63	4	60.48	12	4.68	6	69.58	1	9.29	13
CBO	2.42	9	20.40	6	11.59	14	1.10	9	56.02	9	5.54	1	59.37	10	9.71	7
DB	3.03	5	28.64	1	10.69	16	1.71	10	40.03	1	3.41	13	54.75	14	10.28	1
DGB	2.04	13	9.07	15	20.91	3	0.92	8	66.29	14	5.41	2	54.00	15	9.05	16
EB	2.22	11	10.90	13	20.37	4	0.00	2	58.38	11	3.38	14	64.85	3	9.34	11
LIB	2.84	6	16.94	9	16.88	9	0.85	6	48.73	7	5.06	5	59.54	9	9.50	9
NIB	3.05	4	17.97	8	17.01	8	1.89	11	42.49	4	5.10	4	63.77	4	9.98	6
OIB	2.03	14	15.27	10	13.99	11	0.71	5	62.72	13	4.29	9	51.43	16	9.60	8
UB	2.44	8	20.51	5	12.01	13	2.08	12	49.38	8	4.68	7	58.39	11	10.01	3
WB	3.26	2	18.19	7	17.96	7	2.12	13	45.24	5	5.37	3	60.02	7	10.00	4
ZB	3.88	1	26.50	2	14.69	10	3.21	16	41.87	3	2.24	16	55.05	13	9.47	10
Total	2.61		17.96		16.23		1.45		52.76		4.34		59.47		9.68	

Source: Researcher's Computations on Panel Data (2017)

The ratio of provision for loans to total loans represents asset quality (AQ). The statutory requirement for this ratio is not to go beyond the fair level mark, which is 15%. So, the lower the AQ ratio is the more advisable; and banks within 5% ratio are supposedly in relatively strong position. The AQ ratio computed was 1.47%. This implied that during the period under study, about 1.47% of loan granted to customers were supposed to go bad. The private banks AQ ratio ranges from 3.21% by ZB to 0.0% by both AB and EB, which signifies that all private commercial banks are doing strongly to avoid the risk of nonperforming loans.

The GDP variable reports the gross domestic product growth during the period understudy. The mean value for GDP growth was 9.72%. The Inflation reports on inflationary rate during the period understudy. The mean value was 13.51%. Size, determined as the logarithm of total assets had a mean of 9.68.

4.4 Correlation Analysis

Table 4.4 reports the correlations between the explanatory/independent variables and the dependent variables. A correlation of -1 represents a perfect negative correlation in which variables move in exactly the opposite direction. That is, an increase in one variable results a decrease in value of the other variable. Consequently, variables move in the same direction when a correlation of 1 is found. Correlations indicate the relationship between the variables but they do not imply causation.

As reported in table 4.4, the management efficiency ratio (ME) is the most correlated with ROA with r =.-.837. This implied that ME and return on asset are significantly and inversely related. That is, the decrease in the efficiency ratio implies an increase in ROA. However, efficiency ratio (as part of the CAMEL framework) is preferred to be as low as possible. That is, a lower value of ME variable indicates higher management efficiency. So, the correlation value r = -.837 actually shows that an improved level of management efficiency, which is directly/positively and significantly related to ROA.

Table 4.4: Correlation matrix of dependent (ROA and ROE) and independent Variables

	ROA	ROE	CA	AQ	ME	EA	LQ	Bsize	Inflation	GDP
ROA	1									
ROE	.811**	1								
CA	-.326**	-.693**	1							
AQ	.287**	.363**	-.205*	1						
ME	-.837**	-.755**	.463**	-.310**	1					
EA	.144	.023	-.238*	-.276**	-.093	1				
LQ	-.047	-.224*	.375**	-.300**	.184	.278**	1			
Bsize	.356**	.582**	-.711**	.095	-.439**	.413**	.025	1		
Inflation	.093	.132	.064	.187	-.152	-.296**	-.282**	-.206*	1	
GDP	.010	.070	.031	.250*	-.049	-.270**	-.321**	-.223*	.339**	1

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

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

Source: Researcher's Computations on Panel Data (2017)

The correlation analysis showed that the ratios ME and CA are inversely related to ROA. In contrary, bank size and AQ are positively and directly related to ROA. Meaning, as these variable increases they tend to move in the same direction as banks' performance (ROA). The other four independent variables (Earning Ability, Liquidity, inflation and GDP) are all insignificantly correlated to ROA. Unlike the other three variables, the liquidity ratio have insignificantly and negatively related to ROA.

With regards to correlation between the return on equity (ROE) and the explanatory variables, mixed results were obtained as in the case with the return on asset. Again, the efficiency ratio (ME) is also the most correlated to ROE, with r = -.755. This indicates that improved management efficiency in banks will tend to increase their ROE. The 2nd most correlated ratio to ROE is the capital adequacy (CA) with inverse relationship estimated with r = -.693. Bank size and Asset quality are both positively and significantly correlated to return on equity with r = .582 and r = .363, respectively. ROE is found to have negatively correlated with liquidity ratio, with r = -.224. In spite of this significant relationship, and the high level liquidity of private banks, it is evident that the ROE of private banks could have been severed a lot.

Liquidity in both ROE and ROA has a negative correlations. The correlation of Liquidity with ROE is negatively strong. But as to ROA, it has a weak negative correlation with Liqiudity. Normally a bank that maintains a higher liquidity does it at the expense of good performance since a lot of funds that would have been advanced as loans to earn income/interest is tied up. It is that quality of an asset that enables a bank to respond to any financial situation requiring urgent infusion of money. Liquidity is required to meet regular financial obligations of the bank especially without dipping into its reserves. When banks hold high liquidity, they do so at the opportunity cost of some investment which could generate high returns. The trade-offs that generally exist between return and liquidity risk are demonstrated by observing that a shift from short-term securities to long-term securities or loans raises a bank's return but also increases its liquidity risks and the inverse in is true. Thus a high liquidity ratio indicates a less risky and less profitable bank, i.e lower the ROE of banks.

Bank size, computed as logarithm of bank asset, is found to have positively and significantly correlated to ROA with r = 0.356. Capital adequacy (CA) and ROA, however correlated with r = -.326, which is a significant but inverse relationship between these two financial ratios. A measure of bank's asset quality (AQ), which is ratio of provision for bad debt to advances and return on asset, reported a positively significant correlation with value of r = 0.286. The rest three explanatory variables (earning ability, inflation and gdp) indicate somewhat positive but are insignificantly related to ROE.

The correlation analysis also revealed significantly high correlation between the two profitability/performance measures (ROA and ROE). They are related with r = .811. Moreover, there exist significant correlations among some of the explanatory variables. The existence of significant correlation between any two explanatory variables shows somewhat dependency relationship between them. Depending on the type of the relationship, say positive correlation, an increase in one explanatory variable is associated with the increase in other ratio variable. A negative correlation between two ratios, explanatory variables, indicates an inverse relationship in which an increase in one is associated to a decrease in the other ratio. For example, capital adequacy ratio is positively correlated (r = .375) with liquidity ratio while it has negative relationship (r = -.205) with asset quality. The existence of significant correlation among explanatory variables is an indication of possible multicolinearity. This is because, correlation

coefficients computed between two variables/ratios is done assuming the effect of other variables/ratios constant.

4.5 Regression Analysis of the Determinants of Banks' Profitability

This section empirically investigates which determinants of banks' profitability are present using annual observations for an unbalanced panel of 16 banks between 2010 and 2016. Table 4.6a and table 4.7a report the regression outcomes using ROA and ROE as measure for banks' profitability. The determinants of banks' profitability are investigated using linear regression involving all the independent variables. The reduced forms of regression, which are step-wise regression analysis, results are presented in tables 4.6b and table 4.7b report the regression outcomes using ROA and ROE, respectively, as measure for banks' profitability.

4.5.1 Results for Estimation of the Return on Assets (ROA)

The results estimated from regression model (I) are reported in Table 4.5a. The Adjusted R-squared is 0.699 and is the proportion of variance in the dependent variable (return on asset) which can be predicted from the independent variables (capital adequacy, asset quality, management efficiency, earning ability, liquidity, bank size, inflation and gross domestic product).

This value indicates that 69.9% of the variance in return on asset values can be explained by the explanatory variables; capital adequacy, asset quality, management efficiency, earning ability, liquidity, bank size, inflation and gross domestic product. Again it is worth noting that this is an overall measure of the strength of association, and does not reflect the extent to which any particular independent variable is associated with the dependent variable. This means that there are more variable(s) or factors that may account for profitability (in term of return on asset) that was not included in the model. Apart from the unexplained variability, about 30%, in ROA, the model is a good fit. The p-value of the F-statistic prove the efficiency of the estimated models at 0.05 level of significance.

Table 4.5a: Regression full-model result (Dependent variable: ROA)

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t-value	p-value.	Tolerance	VIF
(Constant)	4.379	2.256		1.941	.055		
CA	.020	.018	.105	1.102	.273	.335	2.985
AQ	.041	.038	.067	1.058	.293	.747	1.338
ME	-.044	.003	-.892	-13.189	.000	.665	1.505
EA	-.010	.052	-.013	-.191	.849	.674	1.484
LQ	.010	.009	.076	1.044	.299	.573	1.746
Bsize	-.014	.208	-.006	-.069	.945	.359	2.788
Inflation	-.006	.007	-.056	-.875	.384	.753	1.328
GDP	-.010	.055	-.012	-.187	.852	.777	1.287
Multiple R		0.851					
Multiple R Square		.724					
Adjusted R Square		.699					
F.value		29.777					
p-value		0.000					

Source: Researcher's Computations on Panel Data (2017)

The model (Model I) is then expressed as in the following linear equation:

ROA = 4.379 -.02CA+.041AQ-.044ME-.01EA+.01LQ-.014Bsize-.006Inflation-.01gdp.

The full model is significant since the p-value of the F-test statistic is less than 0.05, the level of significance.

The regression, however, suffered from multicolinearity problem that is diagnosed with the VIF (variance inflation factor) values for some independent variables is found beyond/above 2. The collinearity test revealed a concern in the above model. Hence, a step-wise regression analysis resulting in reduced-model that as well eliminates the effect of collinearity was conducted which is depicted in table 4.5b below.

Model I, in its reduced form:

ROA = 4.394 - .044ME + .023CA.

Table 4.5b: Regression reduced-model result (Dependent variable: ROA)

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
(Constant)	4.594	.189		24.266	.000		
ME	-.044	.003	-.894	-14.554	.000	.785	1.274
CA	.023	.012	.124	2.016	.047	.785	1.274
Multiple R	0.844						
Multiple R Square	.712						
Adjusted R Square	.707						
F.value	120.160						
p-value	0.000						

Source: Researcher's Computations on Panel Data (2017)

This model generated an adjusted R Square value equal to 0.707. The adjusted R-square values for the full model and the reduced model are almost the same. This reveals that the reduced model is much more efficient and accurate than the full-model. Therefore, independent variables such as asset Quality, Liquidity, Earning Ability, inflation, GDP, and bank size have not contributed much in describing the variation in ROA when they are included in the full-model.

Or the effects of these excluded variables is already explained by the two ratios, ME and CA, due to the significant correlation among most of the explanatory variables exhibited in the correlation matrix (table 4.4).

Table 4.5b shows the results estimated from model 1. The expense-to-income ratio in the model is statistically significant and negative related to return on asset. The expense-to-income ratio measures the overheads or costs of running the bank, as percentage of income and it is used to provide information on variation of bank costs over the banking system. The negative relation this ratio with ROA, which indicates a positive relationship between management efficiency and ROA, indicate that the more the banks are managed efficiently the will achieve a higher return on assets. However, the average expense-to-income ratio exhibited in the panel data is 52.76%, which implies that the overheads cost of private banks appears to be expensive or have inefficiencies inherent in it and therefore affect the banks profit margin, i.e ROA. The negative relationship is in line with expectation and is consistence with Kosmidou (2008). According to Kosmidou (2008), higher expenses result in lower profits of banks. The magnitude of the coefficient of the expense-to-income ratio in model is -0.044 and this suggest that a unit change (a one percent increase in) expense to income ratio will reduce ROA of the banks by 0.044%. This implies that a one percentile deterioration in the banks' management efficiency will reduce its profitability.

Moreover, the reduced regression model II revealed that an increase in capital adequacy will raise the ROA of banks. Specifically, a one percentile increase in asset quality will lead to raise the ROA by 0.03%. In general, the model explicitly indicated that the ME and CA ratios alone can fully express the effect of all other explanatory variables in the study. The exclusion of the other explanatory variables is due to the significant correlation they have with these two variables. That is, the increasing/decreasing of these two variables cannot be effected without proportional changes of other explanatory variables according to the significance of correlation revealed in table 4.4. So, decreasing the ME ratio has effect on increasing AQ, as these two ratios are correlated with r = -.310. Hence, an increase in AQ will have effect on the increase in ROA. Similarly, the positive relationship between CA and LQ entails a positive implied effect of raising the banks liquidity for improved return on assets.

4.5.2 Results for Estimation of the ROE (Return on Equity)

The results estimated from regression model (II) are reported in Table 4.6a. The Adjusted R-squared is 0.748 and is the proportion of variance in the dependent variable (return on equity) which can be predicted from the independent variables (capital adequacy, asset quality, management efficiency, earning ability, liquidity, bank size, inflation and gross domestic product).

This value indicates that 74.8% of the variance in return on equity values can be explained by the explanatory variables; capital adequacy, asset quality, management efficiency, earning ability, liquidity, bank size, inflation and gross domestic product. Again it is worth noting that this is an overall measure of the strength of association, and does not reflect the extent to which any particular independent variable is associated with the dependent variable (roe). This means that there are more variable(s) or factors that may account for profitability (in term of return on equity) that was not included in the model. The model is said to be a good fit as it explains $3/4^{th}$ (beyond 60%) of the variability in ROE. The p-value of the F-statistic proves the efficiency of the estimated models at 0.05 levels of significance.

Table 4.6a: Regression full-model result (Dependent variable: ROE)

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t-value	p-value	Tolerance	VIF
(Constant)	9.980	15.883		.628	.531		
CA	-.625	.126	-.431	-4.951	.000	.335	2.985
AQ	.278	.270	.060	1.031	.305	.747	1.338
ME	-.195	.024	-.513	-8.294	.000	.665	1.505
EA	-1.350	.366	-.226	-3.684	.000	.674	1.484
LQ	.131	.065	.134	2.009	.048	.573	1.746
Bsize	2.376	1.468	.136	1.619	.109	.359	2.788
Inflation	.038	.050	.044	.763	.447	.753	1.328
GDP	.283	.384	.042	.736	.464	.777	1.287
Multiple R		0.877					
Multiple R Square		.768					
Adjusted R Square		.748					
F.value		37.746					
p-value		0.00					

Source: Researcher's Computations on Panel Data (2017)

The model (Model II) is then expressed as in the following linear equation:

ROE = 9.98

- .625CA +.278AQ -.195ME - 1.35EA + .131LQ

+2.376Bsize - .038Inflation - .283gdp.

This full model is significant since the p-value of the F-test statistic is less than 0.05, the level of significance.

Diagnosing the regression for multicolinearity, the VIF (variance inflation factor) values for some independent variables are found beyond/above 2. This reveals existence of multicollinearity problem among some of the independent variables. Moreover, the coefficients of Asset quality, bank size, Inflation and gdp are all insignificant as their corresponding p-values are above 0.05 levels of significance. For these reasons, a step-wise regression analysis was conducted to eliminate collinearity problem and exclude those independent variables that don't significantly contribute in the estimation of ROE. The resulting regression, in reduced-model, is depicted in table 4.6b below.

Model II, in its reduced form:

ROE = 39.733 - .215ME - .747CA – 1.432EA + .135LQ.

This model generated an adjusted R Square value equal to 0.745. The adjusted R-square values for the full model and the reduced model are almost the same. This reveals that the reduced model is much more efficient and accurate than the full-model. Therefore, independent variables such as asset Quality, Inflation, GDP, and bank size have not contributed much in describing the variation in ROE when they are included in the full-model.

Table 4.6b: Regression reduced-model result (Dependent variable: ROE)

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	39.733	3.065		12.965	.000		
ME	-.215	.022	-.564	-9.842	.000	.785	1.274
CA	-.747	.093	-.516	-8.057	.000	.628	1.592
EA	-1.432	.336	-.240	-4.265	.000	.812	1.231
LQ	.135	.058	.139	2.312	.023	.717	1.395
Multiple R		0.869					
Multiple R Square		.755					
Adjusted R Square		.745					
F.value		73.368					
p-value		0.000					

Source: Researcher's Computations on Panel Data (2017)

Table 4.6b shows the results estimated from model II. The expense-to-income ratio in the model is statistically significant and negative related to return on asset. The expense-to-income ratio measures the overheads or costs of running the bank, as percentage of income and it is used to provide information on variation of bank costs over the banking system. A negative relation show that the overheads cost of private banks in Ethiopia appears to be expensive or have inefficiencies inherent in it and therefore affect the banks profit margin. The negative relationship is in line with expectation and is consistent with Kosmidou (2008). According to Kosmidou (2008), higher expenses result in lower profits banks. The magnitude of the coefficient of the expense-to-income ratio in model is -0.215 and this suggest that a unit percentile change in expense to income ratio will reduce ROE of the banks by 0.215 percent.

The variable, ratio of equity to total asset (CA) has a negative and statistically significant relationship with return on equity. CA shows the sufficiency of the amount of equity to absorb any shocks that the bank may experience. According to Kosmidou (2008), it is expected that the higher the equity to assets ratio, the lower the need for external funding and therefore the higher the profitability of the bank. The result of the negative relations implies that the banks' capital was not adequate and therefore they might have obtained external funding which was expensive to finance their operations. The expensive finance may have affect or reduce their profits margin. It also implies that banks should ensure that they are well capitalized if they must remain profitable. It is therefore expected that the banks will retained more of their profits in order to improve the equity to asset ratio to enable the banks to absorb external shock. The magnitude of the coefficient of Capital adequacy ratio in the model is -0.747 and this suggest that a unit change in this ratio will reduce ROE of the banks by 0.747.

Moreover, the ROE of banks can be improved by decreasing their earning ability. That is, if banks lower their earning ability by one percent they can withstand a 1.432% reduction in their ROE. It should be noted that, from the correlation matrix (table 4.4), the reduction in EA is effected with somewhat improved position of banks' position in terms of their CA and AQ ratios. Hence an improvement in banks CA and AQ will improve ROE; although AQ is not included in the model. The model similarly entails about 0.135% improvement in ROE as a result of one percent improvement in their liquidity. In general, only the four ratios (ME, CA, EA and LQ) are capable of expressing the whole explanatory variables because of their strong correlation with the ratio variables that are excluded in the reduced model II.

Discussion

According to the descriptive statistics reported in Table 4.2a, the Ethiopian private commercial banks earn on an average positive profit over the last seven years. However, the difference between minimum and maximum clearly shows that there are large differences in profitability among the Ethiopian private commercial banks. That means, the most profitable private commercial bank in Ethiopia earned 5.25 cents of net income from a single birr of asset investment and 35.67 cents per birr from the banks equity.And the maximum losses incurred are a loss of 1.58 and 5.87 cents on each birr of asset investment and on each birr of shareholder

equity respectively. On the other hand, the revenue earned throughout the study years is an average of 2.61 cents from each birr invested by the bank and 17.96 cents from their equity.

CHAPTER 5: SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter provides the summary of the findings, and also gives the conclusions and the recommendations of the study based on the objectives of the study.

5.1 Summary

The main objective of this study was to investigate the performance profitability of private commercial banks of Ethiopia based on CAMEL approach and rank the banks according to their performance as well as to investigate the relationship between CAMEL variables with profitability measures Return on Asset (ROA) or return on Equity (ROE). Specific objectives were to evaluate and rank the banks based on their performance using financial ratio selected from the CAMEL framework.

The research found that the overall performance of private commercial banks is that they were able to generate about 2.61 cents for each of 1 Birr asset employed; while were able to generate about 17.96 cents out of each 1 Birr investment in their equity. The overall position of the private banks with respect to capital adequacy ratio (28.47%). asset quality ratio (3.21%), earning ability ratio (5.54%), and liquidity ratio (59.47%) are by far much better than the level of statutory requirements. Whereas, in terms of the overall management efficiency ratio (computed 52.76%) the private banks position may not attain the required quality in their management.

The research also addressed the relationship existed between bank specific ratios and profitability measures. Capital adequacy ratio and management efficiency ratio had significant negative relation with the return on asset of private commercial banks. ROA was positively and significantly related to asset quality and bank size. The relation of ROA with earning ability,

liquidity, inflation and GDP growth were found insignificant. The regression model revealed that to the explanatory power of the independent variables was about 70%, which signifies how much the return on asset was impacted by these ratios.

Regarding ROE, capital adequacy, management Efficiency, and liquidity ratios had strong negative relation with Return on Equity. Whereas,ROE was positively and significantly related with both asset quality and bank size. Earning ability, inflation and GDP growth were not significantly related to ROE. The overall explanation power of the internal factors (i.e. management efficiency, capital adequacy, earning ability and liquidity) was 75%. .

5.2 Conclusion

The private banks profitable performance was found to have been significantly influenced mainly by their internal positions with regard to efficiency in their management, capital adequacy ratio, asset quality and liquidity ratios. Whereas, the external variables, mainly the macro variables, inflation and GDP growth, were not have considerable contribution to the banks' profitability performances.

The management efficiency, measured as a ratio of expenses-to-income, was the most influential ratio on the banks profitability: both return of asset and return of equity. This efficiency ratio is partly the most explanatory to ROA and ROE. The banks inefficiency was exhibited as they were expending more than 50% of their income for non interest bearing activities. This high level ratio means either the bank's expenses are increasing or there revenues are decreasing. This high level of inefficiency might have limited/decreased the private banks returns of investing their assets and equities.

The capital adequacy ratio of private banks had also strong negative impact on the banks profitability performance. The capital adequacy as the ratio of equity-to-asset is obviously in an indirect relationship with ROE, which is the ratio of profit-to-equity. This shows that an increase in equity has effects on increasing capital adequacy ratio while decreasing the return on equity. Hence, maintaining high level capital adequacy would result in lowering the banks roe. As a result, private banks were experiencing the trade-off between their position in capital adequacy and their profitability (ROE). For this reason, private banks maintaining the top capital adequacy position were found to have relatively the least performance in their return of equity.

The ratio of the banks' provision for Non-performing-loans (NPL) to the total loan has a positive relationship with both profitability measures. However, higher level of NPL by the banks will ultimately reduce the level of profitability of the banks. This is clearly observed where the private banks that exhibited higher ranking in the capital adequacy ratio were found to have lower rankings with their ROE and ROA. In the context of asset quality, a lower rating indicates a stronger asset quality and minimal portfolio risks. On the other hand, a higher rating reflects a critically deficient asset quality. Therefore, most of the private banks in Ethiopia are in better condition with their asset quality.

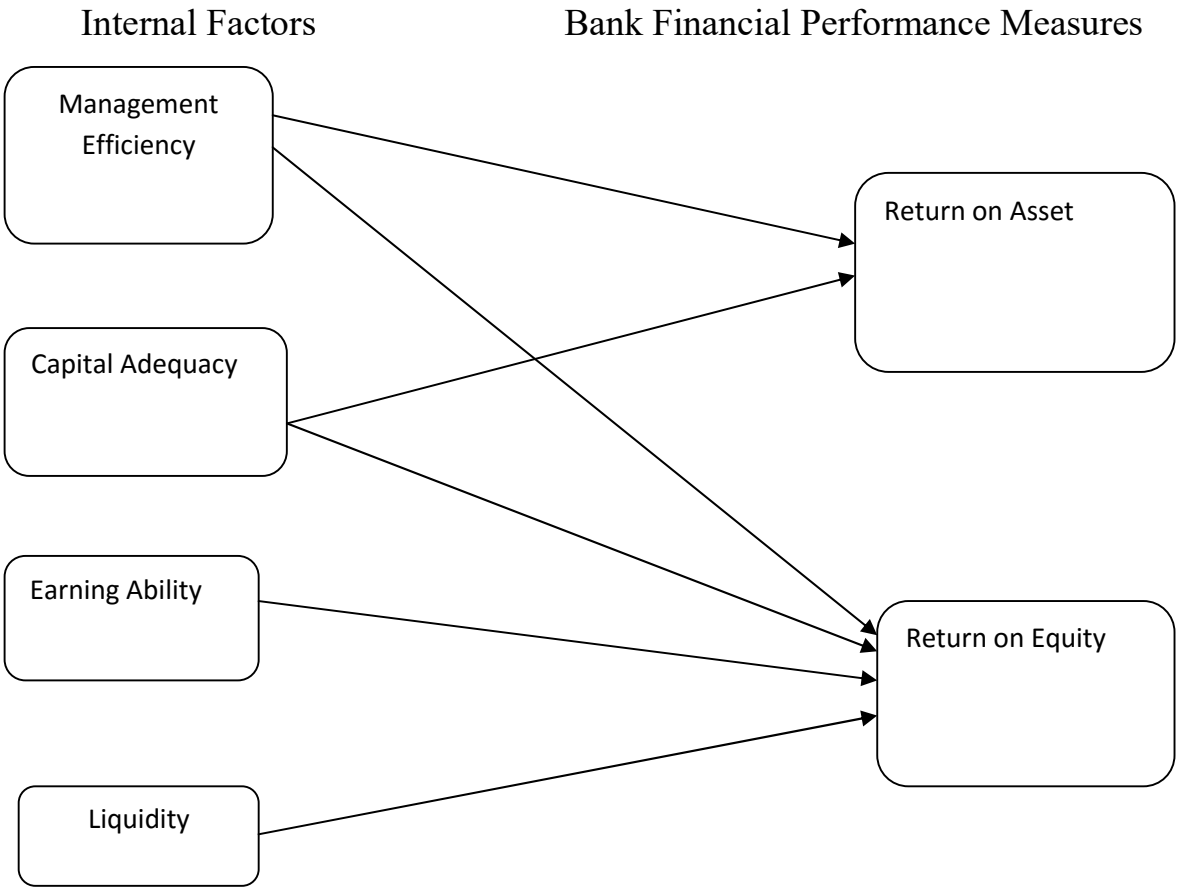
The liquidity ratio of the banks had strong negative relationship particularly with ROE. Private Banks were found to have maintained a higher level of liquidity risk at the expense of their profitability in terms of return of equity.

Generally, it is mostly the internal factors of the banks that have direct or indirect effect on the banks profitability performance. In particular, the management efficiency and capital adequacy ratios have considerable impact on the ROA. Two more banks ratios, Earning ability and

liquidity, are additional explanatory variables that have considerable effect on the private banks ROE. Hence, the two reduced models are a good fit to the projection/forecasting the profitability of private banks.

Based on the research finding, , the conceptual framework of the study shall be represented in the diagram below.

Figure 3: Revised Conceptual Framework



5.3 Recommendations

The study revealed, Management efficiency, capital adequacy, asset quality are the key driver of return on asset of private banks in Ethiopia, in addition to these earning ability and liquidity as the key drivers of return on equity of Ethiopian private commercial banks. Therefore, private banks' managers are advised to give due attention to these variables to improve their profitability.

Although the bank related ratios have considerable explanation power of the private banks' profitability, but they are not capable of fully explain ROA and ROE measures. Hence, the banks in addition to these ratios have to consider other factors (such as bill of purchase) that would further explain or affect their performances. Similarly, researchers could consider this result as input in their similar undertakings.

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Appendix A.

Financial Ratios of Private Banks for the years 2010-2016

No.	Bank	Bcode	Year	ROA	ROE	CA	AQ	ME	EA	LQ	Bsize	Inflation	GDP
1	DB	8	2010	2.623	28.846	9.093	2.181	36.010	2.678	49.769	10.092	8.1	10.3
2	DB	8	2011	3.074	32.273	9.525	1.989	34.176	2.750	52.507	10.166	33.0	11.4
3	DB	8	2012	3.722	35.670	10.433	2.147	32.078	3.687	57.757	10.244	23.3	8.7
4	DB	8	2013	3.073	29.662	10.359	2.246	38.734	3.508	55.909	10.296	8.1	9.9
5	DB	8	2014	3.244	27.428	11.828	0.000	39.078	3.580	53.331	10.342	7.5	10.3
6	DB	8	2015	2.944	24.937	11.807	1.682	47.845	3.954	58.176	10.394	10.1	10.2
7	DB	8	2016	2.544	21.652	11.750	1.705	52.290	3.719	55.782	10.456	7.3	7.6
8	AIB	3	2010	3.116	26.327	11.836	4.715	34.026	2.907	51.518	9.900	8.1	10.3
9	AIB	3	2011	3.565	27.567	12.932	3.635	29.663	2.735	51.480	10.005	33.0	11.4
10	AIB	3	2012	3.304	24.493	13.491	2.705	35.747	4.012	59.804	10.077	23.3	8.7
11	AIB	3	2013	3.416	25.237	13.535	2.305	42.098	4.368	61.458	10.172	8.1	9.9
12	AIB	3	2014	3.086	24.471	12.609	2.269	42.685	4.022	61.014	10.302	7.5	10.3
13	AIB	3	2015	2.704	20.882	12.947	1.739	48.186	4.318	67.396	10.378	10.1	10.2
14	AIB	3	2016	2.512	19.493	12.886	1.526	51.720	5.047	67.672	10.471	7.3	7.6
15	BOA	4	2010	2.239	24.011	9.324	7.407	42.530	3.550	61.361	9.798	8.1	10.3
16	BOA	4	2011	2.486	27.382	9.079	3.332	43.130	4.415	54.577	9.862	33.0	11.4
17	BOA	4	2012	2.625	23.860	11.003	2.568	43.925	4.683	57.556	9.916	23.3	8.7
18	BOA	4	2013	2.136	19.530	10.935	1.989	43.925	3.839	55.344	10.006	8.1	9.9
19	BOA	4	2014	3.968	29.263	13.559	0.000	39.740	4.954	55.637	10.052	7.5	10.3
20	BOA	4	2015	2.135	16.113	13.247	0.000	55.282	4.947	53.113	10.136	10.1	10.2
21	BOA	4	2016	2.143	16.973	12.624	0.000	60.396	5.342	58.758	10.226	7.3	7.6
22	WB	15	2010	3.890	21.236	18.317	3.971	35.145	4.536	63.064	9.759	8.1	10.3
23	WB	15	2011	4.010	24.173	16.590	4.542	35.902	4.415	48.847	9.906	33.0	11.4
24	WB	15	2012	4.028	20.961	19.218	2.432	35.483	4.812	61.924	9.922	23.3	8.7
25	WB	15	2013	3.303	18.756	17.611	2.239	41.841	5.093	62.116	10.017	8.1	9.9
26	WB	15	2014	2.712	14.220	19.072	1.670	52.254	8.051	54.916	10.051	7.5	10.3
27	WB	15	2015	2.570	14.598	17.609	0.000	56.276	5.264	61.513	10.137	10.1	10.2
28	WB	15	2016	2.320	13.387	17.331	0.000	59.806	5.424	67.755	10.209	7.3	7.6
29	UB	14	2010	2.959	27.362	10.813	3.648	39.052	4.475	55.316	9.771	8.1	10.3
30	UB	14	2011	3.001	25.720	11.667	2.770	33.594	3.938	54.023	9.888	33.0	11.4
31	UB	14	2012	3.390	27.036	12.538	2.331	35.775	4.960	60.457	9.944	23.3	8.7
32	UB	14	2013	2.142	17.794	12.038	1.859	53.562	4.465	58.421	9.999	8.1	9.9
33	UB	14	2014	1.669	12.586	13.264	1.441	58.772	4.957	56.930	10.075	7.5	10.3
34	UB	14	2015	1.959	16.683	11.742	1.223	62.214	4.873	58.115	10.157	10.1	10.2
35	UB	14	2016	1.963	16.358	12.001	1.300	62.664	5.090	65.459	10.237	7.3	7.6
36	LIB	11	2010	2.930	16.526	17.732	1.623	45.143	4.300	57.390	9.135	8.1	10.3
37	LIB	11	2011	2.420	12.396	19.519	1.450	45.727	4.947	52.131	9.257	33.0	11.4
38	LIB	11	2012	3.062	17.071	17.934	1.550	41.661	4.523	55.893	9.391	23.3	8.7
39	LIB	11	2013	3.786	20.557	18.418	1.298	37.530	5.359	62.590	9.469	8.1	9.9
40	LIB	11	2014	2.673	15.384	17.375	0.000	52.557	5.774	57.357	9.558	7.5	10.3
41	LIB	11	2015	2.570	18.315	14.031	0.000	57.658	4.792	63.503	9.768	10.1	10.2
42	LIB	11	2016	2.416	18.335	13.177	0.000	60.799	5.742	67.946	9.910	7.3	7.6

43	CBO	7	2010	1.419	13.279	10.688	2.530	64.279	5.189	52.614	9.248	8.1	10.3
44	CBO	7	2011	1.890	19.230	9.831	2.003	54.268	3.886	40.491	9.398	33.0	11.4
45	CBO	7	2012	2.779	24.452	11.366	1.443	42.889	4.952	49.455	9.565	23.3	8.7
46	CBO	7	2013	3.127	29.378	10.644	1.717	40.124	4.064	47.392	9.815	8.1	9.9
47	CBO	7	2014	4.668	31.472	14.833	0.000	39.182	6.665	66.863	9.866	7.5	10.3
48	CBO	7	2015	2.726	22.145	12.309	0.000	55.817	6.537	89.117	10.059	10.1	10.2
49	CBO	7	2016	0.329	2.865	11.490	0.000	95.604	7.518	69.650	10.026	7.3	7.6
50	NIB	12	2010	3.365	21.919	15.351	3.900	38.894	4.788	61.692	9.776	8.1	10.3
51	NIB	12	2011	3.465	21.051	16.461	4.124	35.954	4.850	53.642	9.852	33.0	11.4
52	NIB	12	2012	3.459	18.733	18.463	2.712	35.890	4.612	63.529	9.918	23.3	8.7
53	NIB	12	2013	3.274	17.970	18.218	2.502	41.211	5.489	68.262	9.961	8.1	9.9
54	NIB	12	2014	2.767	15.138	18.278	0.000	41.361	4.678	68.251	10.031	7.5	10.3
55	NIB	12	2015	2.543	15.481	16.425	0.000	51.468	5.392	70.534	10.122	10.1	10.2
56	NIB	12	2016	2.462	15.480	15.906	0.000	52.648	5.908	60.468	10.199	7.3	7.6
57	ZB	16	2010	4.830	32.152	15.024	1.562	37.820	1.226	55.800	9.024	8.1	10.3
58	ZB	16	2011	5.250	35.193	14.919	1.781	31.411	1.681	55.500	9.208	33.0	11.4
59	ZB	16	2012	3.608	30.782	11.720	1.790	38.496	1.880	56.484	9.379	23.3	8.7
60	ZB	16	2013	2.898	19.078	15.191	8.522	59.343	1.824	54.665	9.512	8.1	9.9
61	ZB	16	2014	4.685	28.006	16.729	8.831	35.301	3.194	47.180	9.594	7.5	10.3
62	ZB	16	2015	3.145	20.051	15.683	0.000	45.105	3.170	56.410	9.688	10.1	10.2
63	ZB	16	2016	2.750	20.236	13.589	0.000	45.622	2.684	59.304	9.868	7.3	7.6
64	OIB	13	2010	1.719	9.068	18.954	1.143	66.925	2.282	44.947	9.049	8.1	10.3
65	OIB	13	2011	2.266	15.021	15.088	1.064	52.982	2.412	43.356	9.293	33.0	11.4
66	OIB	13	2012	1.776	11.313	15.702	1.292	62.537	3.187	48.156	9.445	23.3	8.7
67	OIB	13	2013	1.711	12.222	14.001	1.461	66.049	4.366	53.147	9.592	8.1	9.9
68	OIB	13	2014	2.501	20.557	12.168	0.000	53.729	5.729	50.592	9.789	7.5	10.3
69	OIB	13	2015	2.261	21.880	10.333	0.000	64.487	5.334	64.559	9.979	10.1	10.2
70	OIB	13	2016	1.965	16.823	11.681	0.000	72.297	6.704	55.260	10.052	7.3	7.6
71	BuIB	6	2010	0.010	0.030	35.221	1.006	99.723	1.824	80.020	8.681	8.1	10.3
72	BuIB	6	2011	2.493	8.378	29.761	1.135	55.623	4.389	74.547	8.893	33.0	11.4
73	BuIB	6	2012	2.040	9.701	21.026	1.118	54.887	3.803	72.173	9.135	23.3	8.7
74	BuIB	6	2013	2.172	12.350	17.585	1.159	48.929	5.116	61.348	9.328	8.1	9.9
75	BuIB	6	2014	2.655	15.473	17.157	0.000	55.298	5.758	62.433	9.479	7.5	10.3
76	BuIB	6	2015	2.989	19.847	15.061	0.000	53.619	6.131	69.064	9.653	10.1	10.2
77	BuIB	6	2016	2.748	19.516	14.082	0.000	55.256	5.766	67.449	9.834	7.3	7.6
78	BrIB	5	2010	-1.582	-5.866	26.971	1.001	193.273	1.947	64.365	8.579	8.1	10.3
79	BrIB	5	2011	2.322	14.152	16.409	1.118	47.435	3.436	47.795	8.961	33.0	11.4
80	BrIB	5	2012	2.616	14.236	18.376	1.172	42.629	3.504	53.616	9.109	23.3	8.7
81	BrIB	5	2013	2.411	13.882	17.364	1.522	48.654	3.138	61.445	9.342	8.1	9.9
82	BrIB	5	2014	1.600	8.119	19.707	1.634	60.020	6.040	58.887	9.449	7.5	10.3
83	BrIB	5	2015	2.486	14.267	17.421	0.000	54.048	4.840	61.133	9.620	10.1	10.2
84	BrIB	5	2016	3.693	25.068	14.733	0.000	45.859	5.871	69.888	9.857	7.3	7.6
85	AB	1	2011	-0.831	-2.410	34.493	0.000	133.796	1.464	59.989	8.660	33.0	11.4
86	AB	1	2012	1.951	9.142	21.346	0.000	61.316	3.405	58.049	9.093	23.3	8.7
87	AB	1	2013	1.971	11.378	17.324	0.000	63.796	4.701	57.122	9.290	8.1	9.9
88	AB	1	2014	1.802	12.739	14.143	0.000	67.124	4.622	58.566	9.505	7.5	10.3
89	AB	1	2015	2.738	17.522	15.625	0.000	56.966	5.032	63.782	9.661	10.1	10.2

90	AB	1	2016	2.376	15.608	15.220	0.000	60.383	5.724	63.603	9.792	7.3	7.6
91	AdIB	2	2012	1.721	4.501	38.244	1.017	69.700	2.215	73.079	8.628	23.3	8.7
92	AdIB	2	2013	0.000	0.000	27.322	1.002	!	0.000	58.441	8.916	8.1	9.9
93	AdIB	2	2014	3.536	14.156	24.982	1.095	50.031	4.371	64.492	9.101	7.5	10.3
94	AdIB	2	2015	3.394	13.079	25.952	0.000	53.018	4.513	68.705	9.234	10.1	10.2
95	AdIB	2	2016	3.347	12.949	25.849	0.000	51.959	5.139	67.185	9.391	7.3	7.6
96	DGB	9	2014	0.623	3.328	18.718	1.407	66.203	4.807	53.305	8.986	7.5	10.3
97	DGB	9	2015	1.502	7.850	19.141	0.000	74.679	4.933	40.876	9.058	10.1	10.2
98	DGB	9	2016	3.990	16.046	24.869	1.358	57.990	6.499	67.827	9.112	7.3	7.6
99	EB	10	2014	1.833	8.960	20.453	0.000	71.389	2.838	54.521	9.151	7.5	10.3
100	EB	10	2015	2.383	11.843	20.126	0.000	52.305	4.023	72.425	9.344	10.1	10.2
101	EB	10	2016	2.438	11.884	20.519	0.000	51.439	3.291	67.615	9.512	7.3	7.6

Appendix B

The financial ratios were computed using the following formulas.

- Return on asset, $ROA = \frac{Net\ Profit\ after\ Tax}{Total\ Asset}$
- Return on equity, $ROE = \frac{Net\ Profit\ after\ Tax}{Total\ Equity\ Capital}$
- Capital Adequacy, $CA = \frac{Gross\ Capital}{Total\ Asset}$
- Asset Quality, $AQ = \frac{Provisions\ for\ Loans}{Total\ Loans}$
- Management Efficiency, $ME = \frac{Non\ Interest\ Expenses}{Net\ Interest\ Income\ plus\ Non\ Interest\ Income}$
- Earning Ability, $EA = \frac{Net\ Interest\ Income}{Interest\ bearing\ Assets}$
- Liquidity ratio, $LQ = \frac{Total\ Loans}{Total\ Deposits}$
- Bank Size, $Bsize = Log(Asset)$