Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 8, 1219-1238

Determinants Of Profitablity Of Commercial Banks In Ethiopia: A Study On Internal Factors

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Abstract
The purpose of this study was to investigate determinants of commercial banks profitability in Ethiopia a study on internal factor by using panel data of thirteen commercial banks from year 2010 to2018. The study employed an explanatory type of research and secondary financial data were used. On this study Return on Asset (ROA) has been used as a proxy variable for the dependent variable. Based on the result of Haussmann specification test the study used fixed effect model. The fixed effect regression model was applied to investigate the effect of bank size, capital adequacy, liquidity risk, operation efficiency, debt management, funding cost, and loan to asset ratio on profitability. The major findings of the study show that, operation efficiency, capital adequacy and bank size have statistically significant and positive relationship with banks' profitability. However, the relationship for liquidity risk, debt management, funding cost, and loan to asset ratio were found to be statistically insignificant. The study suggests focusing and redesigns the firms together with significant key internal drivers of profitability of commercials banks in Ethiopia.

Keywords: Determinants, Internal Factors, Profitability, Commercial Banks.

1. Introduction
The main purpose of any business is maintaining profitability. Profitability means the ability to make profit from all the business activities of an organization, company, firm, or an enterprise. That means it shows how efficiently the management can make profit by using all the resources available in the market. Bank profitability attracts the interest of academics, economists, investors and policymakers. In identifying bank profit determinant is chances to evaluate which variable have more impact on profit, and important for management to make timely decisions. Many researchers have conducted numerous studies about the profitability of commercial banks and their determinants.

The banking sector is an engine of modern trade and economic development by providing the necessary finance. The bank performance is one of the main concerns of management experts, investors, and economic analysts. Which means they concern closely relates to the significant effect of the profitability of financial organizations in general, and commercial banks in particular, on the potential growth of the economy as a whole (Husain and Bhatti, 2010).

The study conducted by Arora (2014), indicated the importance of banks originates from their role as main channels of savings and allocators of credit in an economy. Arora further noted that emerging economies depend on an efficient banking sector to grow fast. In a similar vein, Leykun and Sharma (2017) pointed out that banks play a key role "in improving economic efficiency by channeling funds from resource surplus unit to those with better productive investment opportunities". Especially in less monetized countries, like Ethiopia, financial sector is dominated by banking industry, which is effective and efficient functioning of the Bank has significant role in accelerating economic growth and mobilizing financial recourses (Berhanu, 2015).

The study conducted by Soana (2011), cited in Rahman, Hamid and Khan (2015), where there is an efficient financial system is always an increase banks' profitability as a result of increased amount of funds available for investment, while enhancing the quality of services provided for the customers. Without achieving enough profitability, Abel and Roux (2016) observe, the banking sector does nothing but consume its own capital and risks its existence.

However, bank profits are not the results of a single factor. The factors, as pointed out in different literatures are commonly divided into two major categories. The first category looks at the bank-specific or internal factors that are controllable by the management of a given bank. The second category is external or macro-economic factors which is beyond the control of the management (Ermais, 2016) the other researchers conducted by (Flamini, C., Valentina C., McDonald, G., Lillian, S., 2009) the internal determinants include bank specific financial ratios representing capital adequacy, cost efficiency, liquidity, asset quality, and size and Economic growth, inflation, market interest rates and ownership are external determinants that affect bank profitability.

Internal drivers of bank performance or profitability should reflect the quality of a bank's management and the shareholder's behavior, the bank's competitive strategies, efficiency and risk management capabilities (Aburime, 2008). Although a quality management leads to a good bank performance, it is difficult to assess management quality directly. In fact, it is implicitly assumed that management quality is reflected in the operating performance. As such, it is not uncommon to examine a bank's performance in terms of those financial variables found in financial statements, such as the balance sheet and income statement Krakah and Ameyaw (2010). The aim of this study is to extend previous particular work on determinant of profitability on Commercial Banks in Ethiopia by exploring the internal factors. Therefore, the objective of this paper is to identify, analyze and measure the internal determinants of profitability in Commercial Banks in Ethiopia since 2010 to 2018.

2. Review of related literatures

2.1. Theoretical Review

This section reviews the basic theoretical issues related to banks and bank profitability and its determinants. Hence, section 2.1.1 presents the role of banks in the economy. Then, section 2.1.2 presents the theories related to bank profitability. Finally, section 2.1.3 presents the factors influencing bank profitability

2.1.1. The Role of Banks

Capital markets suffer from the information asymmetry and the agency problem. The agency problem refers to the dissimilar incentives of borrowers and savers, in a broader context it refers to the dissimilar incentives of principles and agents (Jensen & Meckling 1976). In a case of financial distress, borrowers are limited liable; implying that they have incentives to alter their behavior by taking on more risk than savers are willing to accept. Monitoring the borrowers‟ behavior is time consuming, complex and expensive for individuals. In general, in inefficient markets, financial intermediation is beneficial since banks have lower monitoring and transaction costs than individuals, due to economies of scale and scope another important aspect of banking is the function of maturity transformation. Banks receive short-term savings from depositors and transform those savings into long-term loans to borrowers. By holding a part of the short-term savings in liquid assets and cash, banks could withstand daily withdrawals from depositors. Banks offer a unique service; lending long term while guaranteeing the liquidity of their liabilities to depositors, which can withdraw their money at any time without a decline in nominal value (Schooner & Taylor 2010 cited in van Ommeren 2011). Capital markets cannot achieve maturity transformation with the same benefits as banks can. Individual investors face liquidity, price and credit risk, which they cannot diversify to the extent banks can. As savers do not withdraw their deposits at the same time, banks hold only a minor part of the savings in liquid cash. Thus, banks diversify liquidity risks over a large pool of savers. Individual savers can also diversify their investments in terms of credit and price risks but it remains unlikely that they could

withdraw the investments at any time without facing liquidity issues.

2.1.2. Theories of Bank Profitability

Studies on the performance of banks started in the late 1970s/early 1980s with the application of two industrial organizations models: the Market Power and Efficiency Structure theories (Athanasoglou et al. 2006). The balanced portfolio theory has also added greater insight into the study of bank profitability (Nzongang & Atemnkeng 2006). Thus, each of the aforementioned theories and others related to bank profitability and its determinants are discussed in detail in this particular section as follows

2.1.2.1 The Market Power Theories

As noted in Tregena (2009) applied in banking the market power hypothesis posits that the performance of bank is influenced by the market structure of the industry. There are two distinct approaches within the market power theory; the Structure-Conduct-Performance (SCP) and the Relative Market Power (RMP) hypotheses. According to the SCP approach, the level of concentration in the banking market gives rise to potential market power by banks, which may raise their profitability. Banks in more concentrated markets are most likely to make „abnormal profits" by their ability to lower deposits rates and to charge higher loan rates as a results of collusive (explicit or tacit) or monopolistic reasons, than firms operating in less concentrated markets, irrespective of their efficiency (Tregenna 2009). Unlike the SCP, the RMP hypothesis posits that bank profitability is influenced by market share. It assumes that only large banks with differentiated products can influence prices and increase profits. They are able to exercise market power and earn non-competitive profits (Tregenna 2009).

2.1.2.2 The Efficiency Theory

The efficiency theory supports that the most favorable production can be attained through economies of scale. Thus, maximum operational efficiency in the short run is achieved at a level of output where all economies of scale available are being employed in an efficient manner (Odunga et al., 2013). Additionally, the efficiency theory explains that attaining higher profit margins arises from efficiency which allows banks to obtain both good financial performance and market shares (Mirzaei, 2012). "Efficiency Structure Theory" also suggest that banks able to earn higher profits if they are efficient than others. Efficient structure hypothesis suggests that large banks have superior management and production technologies which able to lower down operational costs, therefore earned higher profits when compared to small banks (Soana, 2011). The efficiency hypothesis prevails when a positive significant correlation between profitability and the market share is signaled (Mensi & Zouari, 2010).

2.1.2.3 The Balanced Portfolio Theory

The portfolio theory approach is the most relevant and plays an important role in bank performance studies (Nzongang & Atemnkeng 2006). According to the Portfolio balance model of asset diversification, the optimum holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets (Nzongang & Atemnkeng 2006).

2.1.3 Determinants of Bank Profitability

The available empirical evidence tend to show that studies on banking have extensively been concentrated more on developed and a few developing countries and limitedly on SSA. There is thus insufficient information on the determinants of bank performance in SSA that would require further investigation (Short, 1979; Bourke, 1989; Molyneux and Thornton, 1992; Demerguc-unt and Huizinga, 2001). In theory, bank profitability determinants are categorized into three indicators: bank-specific, industry-specific and macroeconomic. Bank specific

indicators include: growth in bank assets, capital adequacy, operational efficiency, and liquidity. The common measure for industry-specific representative used in the various studies is bank-concentration. While on the other hand, the key macroeconomic variables include: growth in GDP, GDP-per-capita, inflation expectation, interest rate and its spread. The empirical evidence provides the various methods employed in studying bank profitability using these determinants. Much of the empirical literature agrees that bank level as well and macroeconomic factors largely influence bank profitability. There is however limited evidence that industry-specific factors have any influence on bank profitability. It is against this background that the study utilized only bank level and macroeconomic factors to estimate profitability. Generally profit determinant variables are classified in to two broad categories internal and external factors (variables).

2.1.3.1 Internal Determinants

The internal determinants of commercial banks profitability are those factors which are controlled by the management which account for the inter-firm differences in profitability, given the external environment. Anna P. I. Vong and Hoi Si Chan (2008) define internal determinants of banks profitability as factors that are influenced by a bank's management decisions. As stated by Dr. Devinaga Rasiah (2010) internal determinants can be broadly classified into two sub-categories namely financial statement variables and non-financial statements variables. The financial statement variables are determining factors which are directly driven from items in a balance sheet and profit & loss accounts of the bank. On the other hand, the nonfinancial statement variables are those factors which do not directly displayed on the financial statements accounts.

2.1.3.1.1 Financial Statement Variables

Financial statement variables are those variables which relate to the balance sheet and profit &loss account. The balance sheet account includes asset, liabilities and equity balances and it indicates the financial position of the firms. Asset management is concerned with the asset portfolio decisions which attempt to maximize returns at an adequate level of liquidity. AGU, CC; (1992), as quoted by Devinaga Rasiah (2010), indicated that liability management on the other hand, is concerned with the decisions in relation to deposit mix, borrowings and capital which meet the dual objectives of minimizing funding costs and achieving a desired level of stability in available funds. Hence, asset-liability portfolio decisions would certainly have an impact on commercial bank profitability. Since these decisions are controllable by management, they are thus categorized as internal determinants. On the other hand, profit and loss statement is directly related to income and expense accounts and indicates the operational performance of the management. Regarding the profit and loss statement the main emphasis would be confined to areas such as the amount of interest income, interest expense, income from fee-based services, and noninterest operational expenses. There are plentiful literatures made by using financial statement variables, both from balance sheet and profit and loss accounts, which determine commercial banks profitability. The most frequently used bank profitability determinants which are driven from financial statement include;

Bank Size: In most literatures the effect of size on banks profitability are represented by total asset. Indranarain Ramlall (2009) indicated that size is used to capture the fact that larger banks are better placed than smaller banks in harnessing economies of scale in transactions and enjoy a higher level of profits. One of the most important questions underlying bank policy is which size optimizes bank profitability. According to Athanasoglou et al., (2005) the effect of a growing size of a bank on profitability has been proved to be positive to a certain extent.

Consequently, a positive relationship is expected between bank size and profitability by many banking area researchers. However, for banks that become extremely large, the effect of size could be negative due to bureaucratic and other reasons. Hence, the size-profitability relationship may be expected to be non-linear. Therefore most studies use the banks' real assets in logarithm and their square in order to capture the possible non-linear relationship. Athanasoglou et al. (2005),

Indranarain Ramlall (2009), Dr. Rajesh K. Singh and S. Chaudhary (2009), and Devinaga Rasiah (2010) find positive relationship between bank size and profitability.

Liquidity Risk Liquidity risk is another type of risk for banks; when banks hold a lower amount of liquid assets they are more vulnerable to large deposit withdrawals. In other word liquidity risk, arising from the possible inability of a bank to decreases accommodate liabilities or to fund increases on the assets' side of the balance sheet. Following Saunders and Cornett (2008), liquidity risk refers to the risk that an asset cannot convert into cash or that the conversion is costly. Furthermore, they state that price risk refers to the risk that the sale price will be lower than the purchase price of an asset. It is considered an important determinant of bank profitability Athanasoglou (2006).Therefore, liquidity risk estimated by the ratio of liquid assets to customer deposits and other short term funding. Insufficient liquidity is one of the major reasons of bank failures Ommeren (2011). Liquidity is the quality of an asset that makes it easily convertible into cash with little or no risk of loss. A bank considered liquid when it has sufficient cash and other liquid assets, together with the ability to raise funds quickly from other sources, to enable it to meet its payment obligation and financial commitments in a timely manner.

2.1.3.1.2 Non Financial Statement Variables

Non-Financial statement variable comprises variables which have an indirect impact on items in the financial statements while do not directly displayed on the financial statements accounts. Variables reviewed in this category include management quality, efficiency and productivity, age of the bank, and number of branches (Stiroh and Rumble, 2006).

Management Quality: The management of the banking institution itself is a prerequisite for achieving profitability and stability of a bank. There is evidence that a good management raise profits and market shares (Athanasoglou et al., 2005). On the other hand, where management quality is low and managerial monitoring is imperfect, some lazy workers will not exert full effort on their duties and observing that the remaining good workers may discouraged for work. Finally the total sum effect will reduce profitability. In the same vein, according to Devinaga Rasiah (2010), where management quality is low and the board of directors does not provide honest and effective leadership, they will often being more concerned with securing credit facilities for themselves, and then prudent lending practices cannot be followed. These have the net effect of increasing the ratio of substandard credits in the bank's credit portfolio and reduce the bank's profitability.

According to the literature, among the representative indicators of expressing the banking management quality, the non-interest expense over total assets ratio (NIEA) and cost to income ratio (CIR) are noticed. The first rate underlines the ability of the management to operate the daily activities of the banks at a lower cost. Thus, a reduced level of this indicator has a positive impact upon the bank's profitability. The second rate, cost to income ratio, reflects the capacity of the bank to cover its operating expenses from the income generated and is calculated as the operating costs over total income. Thus, we expect a negative relationship between cost to income ratio and bank profitability.

2.2 Empirical Literature Review

Numerous empirical studies were conducted to identify the determinants of bank profitability in many countries. In recent literature, the determinant of bank profitability is defined as a function of internal and external determinants. Internal determinants are related to bank management and termed micro or bank specific determinants of profitability (Gungor, 2007). The external determinants are reflecting economic and legal environment that affects the operation and performance of banks. According to the nature and purpose of each study, different variables could be used. Among the internal determinants, there are bank specific financial ratios representing capital adequacy, cost efficiency, liquidity, asset quality, and size. Economic growth, inflation, market interest rates and ownership are external determinants that affect bank profitability.

According to the study by Kaya (2002) on the determinants of banks profitability in Turkey, equity to assets affects ROA ratio positively while affecting ROE negatively. Furthermore, real interest rate, ratio of securities to total assets, share of the bank in total assets of the sector and open foreign currency position have positive impact on ROE while budget deficit of the public sector and ratios of credits and liquid assets to total assets affect both ROA and ROE positively. On the other hand, net non-performing loans affects ROA negatively while ratios of staff expenditures and deposits to total assets affect both ROA and ROE negatively.

Kiyota (2009), using data from 2000 to 2007 for 29 Sub-Saharan African countries to analysis efficiency and profitability of commercial banks, suggests that the profit efficiency of Non-SSA foreign bank has a negative and statistically significant relationship with three variables such as the return on the average equity, equity to net loans and net loans to total assets during the pre crisis period (2004–2007)

Fadzlan (2011) studied the influence of bank's internal factors and macroeconomic indicators on the Korean banks' profitability during 1992 to 2003. On the basis of regression it was concluded that liquidity has negative impact on profitability banks with lower liquidity level to show higher profitability. Diversification regarding banks' income sources has positive impact on profitability. Credit risk has negative impact. Business cycle particularly inflation shows pro-cyclical impact on bank profitability size has positive impact on the profitability where as there is a negative influence of financial crisis in the Asia on the Korean banks, Korean banks showed more profitability during the period of pre-crisis than the post crisis period.

Sufian (2011) examined the impact of bank specific and macroeconomic variables on the performance of Korean banking sector during the pre- and post-Asian financial crisis. A total of 251 bank year observations consisting of 11 commercial banks over the period 1993- 2003 were employed and tested using panel fixed and random effect regression technique. In regards to macroeconomic perspectives, the result shows that inflation has positive association with banks' return on assets.

There is now a large literature which has examined the role played by management of resources in determining bank profitability. It is generally agreed that better quality management of resources is the main factor contributing to bank performance, as evidenced by numerous studies that have focused on the U.S. banking system (Deyoung and Rice, 2004; Stiroh and Rumble, 2006; Bhuyan and Williams, 2006; Hirtle and Stiroh, 2007) and the banking systems in the western and developed countries (Ho and Tripe, 2002; Williams, 2003; Pasiouras and Kosmidou, 2007; Kosmidou et al., 2007; Kosmidou and Zopounidis, 2008; Athanasoglou et al., 2007; Albertazzi and Gambacorta, 2008).

By contrast, fewer studies have looked at bank performance in developing economies. Guru et al. (2002) investigate the determinants of bank profitability in Malaysia. They used a sample of 17 commercial banks during the 1986 to 1995 period. The profitability determinants were divided into two main categories, namely the internal determinants (liquidity, capital adequacy, and expenses management) and the external determinants (ownership, firm size, and economic conditions). The findings revealed that efficient expenses management was one of the most significant in explaining high bank profitability. Among the macro indicators, high interest ratio was associated with low bank profitability and inflation was found to have a positive effect on bank performance.

Heffernan and Fu (2008) examine the performance of different types of Chinese banks during the period 1999 and 2006. The results suggest economic value added and the net interest margin do better than the more conventional measures of profitability, namely return on average asset (ROAA) and return on average equity (ROAE). Some macroeconomic variables and financial ratios are significant with the expected signs. Though the type of bank is influential, bank size is not. Neither the percentage of foreign ownership nor bank listings has a discernible effect.

Addis Alemayehu, Alubel Kassaw Belete(2019) examine the effects of operational efficiency on the performance of state owned and private commercial banks through examining the financial profile to explore the effects of operational efficiency on the performance. The study used secondary data, which was annual report of the selected banks (for the year 2012 to 2017). The result of this study operational efficiency has great impact on performance of commercial banks.

Ben Naceur and Goaied (2008) examine the impact of bank characteristics, financial structure, and macroeconomic conditions on Tunisian banks' net-interest margin and profitability during the period of 1980 to 2000. They suggest that banks that hold a relatively high amount of capital and higher overhead expenses tend to exhibit higher net-interest margin and profitability levels, while size is negatively related to bank profitability. During the period under study, they find that stock market development has positive impact on banks' profitability. The empirical findings suggest that private banks are relatively more profitable than their state owned counterparts. The results suggest that macroeconomic conditions have no significant impact on Tunisian banks' profitability.

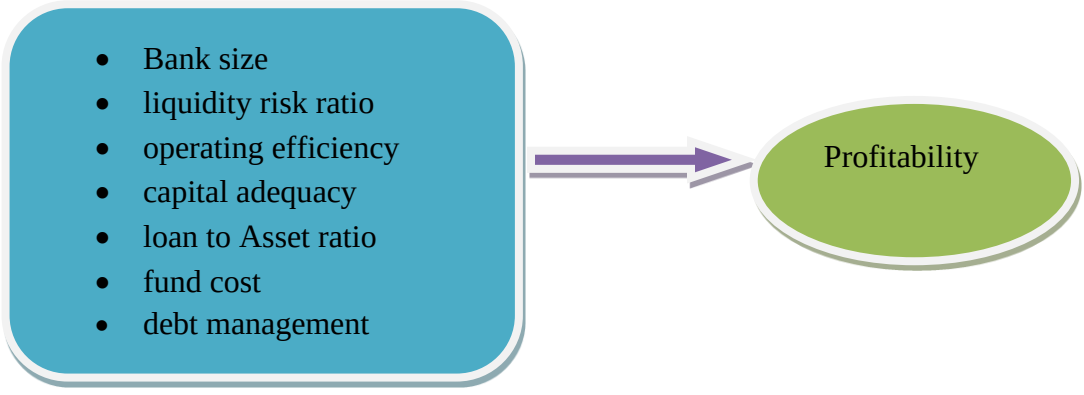
2.3 Summary and knowledge gap

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. Due to the variation of the environment and data included in the analysis the results of various studies differ significantly. While this study focused on some of the internal determinant of profitability on commercial banks in Ethiopia .Up to the best knowledge of the researcher, in Ethiopia context it's not possible to get a study which took; bank specific factors to test the effect of debt management on profitability of commercial banks in Ethiopia. The current study therefore aimed at contributing to the literature gap on the subject matter by adding debt management independent variables and by expanding the number of commercial banks and analyzes the effect of the variables on profitability of commercial banks in Ethiopia.

2.4 Conceptual Framework

Different empirical evidences suggested that profitability of commercial banks influenced by internal, industrial and macro-economic factors. However this study is concentrated only the internal determinants of profitability or bank specific determinants of profitability in Commercial Banks in Ethiopia includes bank size, Liquidity Risk, operating efficiency, capital adequacy, loan to asset ratio, fund cost and debt management.

Figure 2.1 conceptual framework



3. Research methodology

3.1 Research Design

In order to achieve the objectives of the study, the research undertakes the explanatory type of research design to establish causal relationship between variables. The researcher has used panel data (Longitudinal data) of thirteen commercial banks operating in Ethiopia. To examine the effect of independent variables (Bank size, liquidity risk ratio, operating efficiency, capital adequacy, loan to Asset ratio, fund cost and debt management) over the dependent variable (Return on Asset) for the period 2010-2018.

3.2 Population and Study Unit

The target population of this study includes all commercial banks registered by NBE and operating in Ethiopia. According to NBE 2015/16 reports, currently, the number of commercial banks declined to 17 from 18 due to the merger of Construction & Business Bank with Commercial Bank of Ethiopia. Of the 17 banks 16 are private and 1 public. However, because of lack of nine years' data that is required for the analysis purpose, banks which started their operation before 2010 were included in the study. As result, the numbers of sample banks in this study were reduced to thirteen.

3.3. Sampling Techniques and Sample Size

Sampling involves the various procedure used to select a part to represent a population. Purposive sampling were used in determining the sample banks in the study taking into account size of the bank and years of experience in operation. The bank selection is done following the historical formation time of banks and in fact with consideration of their ownership structure and asset size. Among the 17 Ethiopian commercial banks, thirteen of them (Commercial Bank of Ethiopia, Awash Bank, Dashen Bank, Bank of Abyssinia, Wegagen Bank, United Bank, Nib International Bank, Cooperative Bank of Oromia, Lion International Bank, Zemen Bank, Oromia international bank, Buna international bank and Berhan international bank) are selected taking into account size of the banks and their years of experience in operation. They are assumed to be representative samples of all other banks in the country.

3.4 Data Source and Collection Methods

In order to achieve the research objectives mentioned section 1.3, the study used audited financial statements. The data set cover a period of nine years starting from 2010 to 2018, involving thirteen commercial banks in Ethiopia (Commercial Bank of Ethiopia, Awash Bank, Dashen Bank, Bank of Abyssinia, Wegagen Bank, United Bank, Nib International Bank, Cooperative Bank of Oromia, Lion International Bank, Zemen Bank, Oromia international bank, Buna international bank and Berhan international bank) for nine consecutive years. The study employed secondary data. The secondary data were collected from the balance sheet and income statement from selected banks. In Ethiopia banks to report and submit their annual report to the controlling body in this case NBE. As a result it makes life easy for the researcher to get annual reports of all selected banks from the NBE central data base and the financial statements from the annual audited report of NBE. Data from balance sheet and income statements were used for this research and to run the model.

3.5. Instruments of Data Collection

This study was use panel data. The researcher prefers to use panel data since panel data set has both a cross-sectional and a time series dimension, where all cross section units are observed during the whole time period can take heterogeneity among different units into account over time by allowing for individual-specific variables. The main sources of data for the study were obtained from the balance sheet and income statement of thirteen purposively selected banks.

3.6 Methods of Data Analysis

The collected panel data were analyzed by using descriptive statistics, correlations, and panel regression model. The secondary data were analyzed by using E-views 8 windows software package. Basically, descriptive statistical tools were used to analyze the mean, standard deviation, minimum and maximum values of the study. Before undertaking any manipulations of the data, the study compute the descriptive statistics and correlation matrices for all banks in the sample, since correlation analysis were used to select the variables which entered in the

econometrics model and will also checked for multicolinearity of the data.

3.7 Panel Data Regression Models

Panel data refers to a type of data that contains observations of multiple phenomena collected over different time period for the same group of individuals, units or entities. In short, in econometrics panel data refers to a multidimensional data collected over a period of time. From the research methodology, the model is containing Return on asset (ROA) indictors of commercial banks profitability as the dependent variables; the explanatory variables include Bank size, liquidity risk ratio, operating efficiency, capital adequacy, fund cost, debt management and loan to asset. Hence, based on the relationship among the above stated bank profitability indictors and bank-specific determinants, the following functional forms serve as the basis for the investigation, using panel regression as:

$$ROA = f(LN(SIZE), LRR, CAR, OER, LAR\ FDC, DM)$$

Where:

ROA =Return On Asset

LN (SIZE) = Natural Logarithm of Size of the bank (Asset)

LRR= liquidity Risk Ratio

OER= operating efficiency ratio

CAR=capital adequacy ratio

LAR= loan to Asset ratio

FDC=fund cost

DM=debt management

The general models which incorporate all of the variables to test the hypotheses of the study are:

$$ROAit = \beta + \beta1\ LN\ (SIZE)\ it + \beta2\ LRR\ it + \beta3\ CAR\ it + \beta4\ OER\ it + \beta5\ LAR\ it + \beta6\ FDC\ it + \beta7\ DMit + \varepsilon it$$

Where**:**

ROAit - is the dependent variable as a proxy for bank's profitability, for bank i at time t.

β- Constant

β 1-7 – coefficient of independent or explanatory variable

i, t.....indices for individuals and time

ε – Error term

Panel data regression analysis can be done in mainly three ways:

3.7.1 Pooled OLS Regression Model

This type of panel data model assumes homogeneity of all sections of data in a panel data study does not treat each section differently. Alternatively, it treats all section as just a single section of data. In short, there are no unique characteristics of individuals within the measurement set and no universal effects over time. The form of panel data regression equation is similar to ordinary least square, i.e.

$$ROAit = \beta + \beta1\ LN\ (SIZE)\ it + \beta2\ LRR\ it + \beta3\ CAR\ it + \beta4\ OER\ it + \beta5\ LAR\ it + \beta6\ FDC\ it + \beta7\ DMit + \varepsilon it$$

Where i = 1, 2... N and t = 1, 2... T and N = Number of individuals or cross section and T is the number of time periods. From this model NxT can be generated equation which is equal to T equation of cross and as much N equation coherent time or time series.

3.7.2 Fixed effects model

This type of model allows for heterogeneity or individuality among different cross-sections allowing each cross-section to have its own intercept. In short, the intercept may be different for the cross-sections but it is time invariant that is the intercept remains the same over time. The error term in a fixed effects model is assumed to vary non-stochastically over each entity and time. There are unique attributes of individuals which do not vary across time and is correlated with independent variables. Summarily, we can conclude that in a fixed effect models, the parameters of the model are fixed alternatively, the group means are fixed. The fixed effect model can be estimated with the aid of dummy variables. The regression equation of fixed effects model panel data is

$$ROAit = \beta i + \beta1\ LN\ (SIZE)\ it + \beta2\ LRR\ it + \beta3\ CAR\ it + \beta4\ OER\ it + \beta5\ LAR\ it + \beta6\ FDC\ it + \beta7\ DMit + \varepsilon it$$

Where i = 1, 2... N and t = 1, 2... T. Where N = number of individuals or cross section and T = the number of time periods.

3.7.3 Random effects model

This model is also known as the variance components model. Random effect model also allows for heterogeneity and is also time invariant

but the individual specific effect is uncorrelated with the independent variables. It can also refer to as a kind of hierarchical linear model which adopts the assumption of data being drawn from a hierarchy of different populations whose differences relates to that hierarchy. In the random effect model, residuals may be interconnected between times and between individuals or cross sections. Therefore, this model assumes that there is a difference of intercept for each individual and the intercept is a random variable. So in the random effect model there are two residual components. The first is the residual as a whole where the residual is a combination of cross section and time series. The second residual is an individual residual which is a random characteristic of the i-th unit observation and remains at all times. The regression equation of panel data of random effects model is

$$ROAit = \beta + \beta 1\ LN\ (SIZE)it + \beta 2\ LRR\ it + \beta 3\ CAR\ it + \beta 4\ OER\ it + \beta 5\ LAR\ it + \beta 6\ FDC\ it + \beta 7\ DMit + \mu i + \varepsilon it$$

Where i = 1, 2... N and t = 1, 2... T.
N = number of individuals or cross section
T = the number of time periods.
Eit = is the residual as a whole where the residual is a combination of cross section and time series.
Ui = is the individual residual which is the random characteristic of unit observation the i-th and remains at all times.

3.7.4 Selection Method of Panel Data Regression Model

To select the most appropriate model, there are several tests that can be done, such as:

(1) Chow Test

Chow test is a test to determine the model of whether Common Effect or Fixed Effect is most appropriately used in estimating panel data.
If Results:
H0: Select OLS (p> 0.05)
H1: Select FE (p <0.05)

(2) Haussmann Test

Haussmann test is a statistical test to select whether the most appropriate Fixed Effect or Random Effect model is used.
If Result:
H0: Select RE (p> 0.05) or H1: Select FE (p <0.05)

4. Result and discussion

4.1 Descriptive Statistics

The data used in this study were the audited financial statements in the commercial banks of Ethiopia .The descriptive statistics for the dependent and independent variables are presented below. The dependent variable is financial performance measured by ROA and the independent variables were Capital Adequacy, Bank Size, Operating efficiency ratio, liquidity risk ratio, debt management ratio, fund cost and loan to asset ratio. The key descriptive measures of the variables over the period take in to account. The summary statistics for all variables reported in the table below which contains the descriptive statistics of determinant variables of profitability of commercial banks in Ethiopia a period of nine years starting from 2010 to 2018

Table 4.1 Descriptive Statistics of Dependent and Independent Variables

	ROA	LRR	OER	DBR	CAR	LAR	FDC	SIZE
Mean	0.03112	0.38297	1.0720	0.59131	0.13562	0.5346	0.0323	10.0320
Median	0.03000	0.34000	0.9860	0.58900	0.13247	0.4487	0.0272	10.0167
Maximum	0.09400	0.88800	2.8310	0.89000	0.35208	4.7298	0.3531	14.2045
Minimum	-0.03200	0.05920	0.1900	0.38320	0.00136	0.3009	0.0021	8.5797
Std. Dev.	0.01348	0.18463	0.5434	0.08876	0.04822	0.5580	0.0415	0.6907
Skewness	0.8203	0.24214	0.4091	0.43324	0.90014	1.3271	0.0482	-0.1084
Kurtosis	4.3148	2.64715	3.5416	2.1438	3.59835	3.4498	3.0038	1.3964
Jarque-Bera	6.449	1.1518	3.0894	4.7604	11.547	3.253	0.0299	3.4011
Probability	0.0014	0.06218	0.0133	0.0067	0.0031	0.0012	0.0091	0.0149
Observations	117	117	117	117	117	117	117	117

Source: computed from E-views 8 result

As shown in the Table 4.1 above, the descriptive statistics of the study composed of 117 observations collected from thirteen commercial banks in Ethiopia over the period 2010 to 2018. The profitability measure used in this study namely; ROA indicates that the Ethiopian banks attained on average a positive profit after tax over the last nine years. The Return on asset (ROA) shows the profits earned per unit of asset which reflects bank's ability in utilizing the financial and real assets to generate profits which is measured by Net income divided by total asset. For the total sample, the mean ROA was 3.11% with a minimum of 3.2% and a maximum of 9.4%. The result shows that those Commercial banks in Ethiopia earn 9.4% return on averages after tax for every one birr invested in the company's assets. The standard deviation statistics on ROA was (0.01348) or 1.3% which indicates that the variation between the commercial banks in utilizing the financial and real assets to generate profits was very small during the study period undertaken. Thus the result shows that these banks need to optimize the use of their assets to increase the return on their assets. Regarding the explanatory variables of the model there are some interesting statistics that have to be mentioned in the determinant of profitability of commercial banks in Ethiopia a case of internal factor:

Liquidity Risk Ratio (LRR): Liquidity is a prime concern for banks and the shortage of liquidity can trigger bank failure. Liquidity risk was estimated by the ratio of liquid assets to short term customer deposits and other short term borrowing or a ratio of cash and cash equivalents over short term customer deposits and other short term borrowing.

Liquidity is the amount of short term responsibilities that could be met with the amount of liquid assets to short term customer deposits was 38.29% on average, with a minimum of 5.9% and a maximum of 88.8%. This means that the maximum measures of the ability of banks to meet short-term obligation is 88.8% and a minimum measures of the ability of banks to meet short-term obligation is 5.9% and the average measures of the ability of banks to meet short-term obligation is 38.29%. The standard deviation statistics for liquidity risk ratio was (0.18463) or 18.46% indicates that the variation between individual banks' to meet short-term obligation during the study period undertaken.

Operating Efficiency (OER): The operating efficiency measures efficiency of banks in generating operating revenues by controlling operating expenses .It is used as an indicator of management's ability to control costs in order to generate revenue. Operational efficiency indicator is the expense variable and explains how banks could be efficient in resource allocation and utilization including human resource and technological improvements in banking. The coefficient of the variable representing Operational efficiency (revenue to cost) ratio with a maximum of management's ability to control costs was 283.1% and a minimum of management's ability to control costs was 19% and the average ability of the management to control cost is 107.2% this shows that a high operating efficiency ratio indicates that the contribution of the management to control cost reflect a high efficient management and contributes the raise of profitability. And the standard deviation statistics for operating efficiency ratio was (.0.5434) or 54.34% indicates the variation between individual banks' in resource allocation and utilization of management's ability to control costs during the study period.

Debt management ratio (DBR): the debt management is used to analyze a company's long-term debt-repaying ability and its financing structure using the ratio of loans to deposits. The loan to deposit ratio is used to calculate a lending institution's ability to cover withdrawals made by its customers. The banking long-term debt-repaying ability and its financing structure shows that the maximum of repaying ability and its financing structure was 89%, a minimum of repaying ability and its financing structure was 38.3% and the average of long-term debt-repaying ability and its financing structure was 59.1% which indicates that ability of banks to withstand deposit withdrawals and willingness of banks to meet loan demand was on average is 59.1%. And the standard deviation statistics for debt management ratio was (0.08876) or 8.9% indicates the variation between individual banks'

for long-term debt-repaying ability and its financing structure during the study period.

Capital Adequacy Ratio (CAR): Capital Adequacy Ratio is basically the proportion of the bank's equity as a proportion of its risk weighted assets. It is the proportion of a bank's own equity in relation to its risk exposure. Capital adequacy is a measure of bank`s financial strength since it shows the ability to withstand/ tolerate with operational and abnormal losses. CAR determines risk behavior of banks. It is a measure of banks solvency and ability to absorb risk. Thus, this ratio is used to protect depositors and promote stability and efficiency of financial systems. It is measured by total Equity to total asset ratio. The ratio of equity to total assets indicates that the financial strength, stability and efficiency of financial systems was a minimum of 0.14% and maximum of 35.2% with a mean value 13.56% which indicate that need external funding to strength, stability and efficiency of financial systems. The standard deviation statistics for capital strength was 0.04822 or 4.8% indicate the variation of equity to asset ratio between the strength, stability and efficiency of financial systems of commercial banks in the study period.

Loan to total asset ratio (LAR): loans are assets with risk, and their large share in the bank assets means a growth of the bank's exposure to risks, especially the credit risk. The ratio of loans to total assets can be used as a proxy variable for asset quality. If this rate is very high, the asset quality is reduced and it will increase the number of marginal borrowers that default. Thus the ratio of loan to total asset is a proxy variable for asset quality was a minimum of 30.09% and a maximum of 472.9% with a mean value 53.4% which indicate that the banking loans are the main income source for a bank, thus, a high level indicates to have an effect on profitability. The standard deviation statistics for asset quality was 0.05380 or 53.8% which indicate a high variation in asset quality between the commercial banks in Ethiopia during the study period.

Fund cost (FDC): fund cost is defined as the interest expense on customer deposits expressed as a percentage of average customer deposits. This rate reflects the ability of a bank to attract deposits at a low cost. The interest expense on customer deposits expressed as a percentage of average customer deposits was a minimum of 0.2% and a maximum of 35.3% with a mean value 3.2% which reflects that the ability of a bank to attract deposits at a low cost .Thus, a low level indicates to have positive effect upon the profitability of the bank. The standard deviation statistics for the interest expense on customer deposits was0.04149 or 4.1% which indicates the variation in the ability of a bank to attract deposits at a low cost between the commercial banks in Ethiopia during the study period.

Bank size (LN): bank size is generally used to capture potential economies or diseconomies of scale in the banking sector which is the amount and variety of production capacity and ability a company possesses or the amount and variety of services a company can provide concurrently to its customers. Compared to small firms, larger firms are able to produce the same goods more cheaply because they have achieved more learning and greater cumulative experience and they are able to spread their fixed costs over a greater amount of production and this is known as economies of scale. The result indicates that size for potential economies or diseconomies of scale was a mean value 10.747 billion Birr with the maximum and minimum values were 160 trillion and 380 million respectively. The standard division indicated in with a value of 0.69 billion implies that there is a huge difference between the biggest bank and the small bank. The effect of a growing bank's size on profitability positive and those banks which have a big size to benefit from the superior management and the superior capabilities in product development, marketing, commercialization, financial scope, specialization, stronger bargaining power, stronger competitive power, bigger market share. Further, they have more opportunity to work in the fields which require high capital rates since they have much more resources and this situation provides them the opportunity to work in more profitable fields with little competition and have an advantage of absorbing some credit risks.

Table 4.2 Mean return on asset as a measure of bank profit

Over	Mean	Std. Err.	[95% Conf.	Interval]
CBE	.0426333	.0089812	.0248449	.0604218
DB	.0306222	.0018081	.027041	.0342035
AB	.0332222	.0014793	.0302923	.0361521
BOA	.0265556	.0020957	.0224047	.0307064
WB	.0343333	.0025111	.0293598	.0393069
UB	.0247778	.0025374	.0197522	.0298034
LIB	.0324	.0015654	.0292995	.0355005
CBO	.0257	.0045498	.0166885	.0347115
NIB	.0324444	.0019938	.0284954	.0363935
ZB	.0435556	.0047525	.0341426	.0529685
OIB	.0258889	.0018518	.0222212	.0295565
BUIB	.0261222	.0034914	.019207	.0330374
BRIB	.0263333	.0080829	.0103241	.0423425

Source: computed from E-views 8 result

As exhibited from the table 4.2 return on asset a mean value of 4.4%, with a maximum values of 6.7% and minimum value2.5% which was registered by Zemen bank were the highest proxy of profit under the study period in the given observation of commercial banks in Ethiopia and the least contribution for profit which was recorded by united Bank on a mean value of 2.5%, with a maximum values of 4% and minimum value2% in the study period for the given observation of commercial banks in Ethiopia. Thus the result shows that the most profits earned per unit of asset which reflects bank's ability in utilizing the financial and real assets to generate profits which is measured by Net income divided by total asset was Zemen bank whereas the least profits earned per unit of asset which reflects bank's ability in utilizing the financial and real assets to generate profits measured by Net income divided by total asset was united bank during the study period.

4.2 Model identification

To analyze the internal determinants of commercial banks profitability in Ethiopia under this study, panel regression method was employed. Panel data refers to a type of data that contains observations of multiple phenomena collected over different time period for the same group of individuals, units or entities which means it provided detail information as it consists of both the cross sectional information, which captures individual variability, and the time series information, which captures dynamic adjustment.

Table 4.4: chow test identification of common effect or fixed effect.

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.437807	(12,98)	0.0003
Cross-section Chi-square	41.105595	12	0.0000

Source: computed from E-views 8 result

In this study, Chow test was employed to determine the model of whether common effect (CE) or Fixed Effect (FE) is most appropriately used in estimating panel data. As shown in the table 4.4, reports that a chi- square value of 41.1055 with a p-value 0.0000.The test based on that value choose fixed effect model from the

common effect model (OLS) as the test shows a significant p-value.

Secondly, Haussmann test was employed to determine the best model between fixed effect and random effect. As shown in table 4.5 the Haussmann test shows a chi-square value of 34.67 with a p-value of 0.000. The Haussmann test assured that we have enough evidence to reject the null hypothesis (random effect), and the result choose fixed effect from the random effect model.

Table 4.5: Haussmann test identification fixed effect or random effect.

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

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	34.676673	6	0.0000

Source: computed from E-views 8 result

In order to estimate the panel regression models, the Haussmann test was performed to determine the appropriateness of the model to be adopted where the null hypothesis is that the preferred model is random effects and the alternative states that the fixed effects is preferred.

Table 4.6 Fixed effect panel regression model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.247337	0.035251	-7.016498	0.0000
CAR	0.069486	0.031601	2.198871	0.0303
LRR	0.010025	0.007995	1.253833	0.2129
OER	0.019895	0.002831	7.027831	0.0000
LAR	0.001930	0.001663	1.160034	0.2489
SIZE	0.025107	0.003147	7.977395	0.0000
FDC	0.017858	0.022951	0.778103	0.4384
DBR	-0.016263	0.015970	-1.018331	0.3111

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.597573	Mean dependent var	0.031122
Adjusted R-squared	0.518747	S.D. dependent var	0.013482
S.E. of regression	0.009353	Akaike info criterion	-6.351907
Sum squared resid	0.008485	Schwarz criterion	-5.879741
Log likelihood	391.5866	Hannan-Quinn criter.	-6.160214
F-statistic	7.580921	Durbin-Watson stat	2.024327
Prob(F-statistic)	0.000000		

Source: computed from E-views 8 result

This section presents the outputs of the regression analysis on the determinants of profitability on commercial banks in Ethiopia a study on internal factor. As indicated by Fixed effect panel regression model result shown in table 4.6, the independent variables capital adequacy (CA)

bank size (LN size) and operating management efficiency(OER) had statistically significant effect on profitability at 5% significance level. On the other hand, fund cost (FDC), loan to asset ratio (LAR), debt management ratio (DM) and liquidity risk ratio (LRR) had not statistically significant effect on profitability at 5% significance level. Among the significant variables, bank size (LN size) and operating management efficiency (OER) were significant at 1% significance level since the p-value for both variables were 0.000.

4.4. Discussion

The main objective of the study is identifying and measuring the main internal factors that determine the profitability of commercial banks in Ethiopia. As per the fixed effect panel model analysis the following findings are discussed.

The researcher find bank size has positive and significant effect on profitability in terms of return on asset at 5% significant level. This positive relationship between the bank size and profitability implies that bank size induces economies of scale there by making larger banks more profitable. Economies of scale will reduce the cost of gathering and processing information. The larger the bank size, the more profitable the bank which indicate that large bank is able to benefit from the superior management and the superior capabilities in product development, marketing, commercialization, financial scope, specialization, stronger bargaining power, stronger competitive power, bigger market share. Further, they have more opportunity to work in the fields which require high capital rates since they have much more resources and this situation provides them the opportunity to work in more profitable fields with little competition. It could also mean that bank size is associated with diversification which may affect favorably on risk and product portfolio. For large firms their size permits them to bargain more effectively administer prices and realize significant higher prices for the particular product which tends to earn higher profit .This positive relationship supported by the previous studies Athanasoglou et al. (2006) on South Eastern European banks, Indranarain Ramlall (2009), Dr. Rajesh K. Singh and S. Chaudhary (2009), Devinaga Rasiah (2010) Gul et al. (2011) on Pakistan banks, Kosmidou, 2008 on Greece banks. In contrary with this paper diseconomies scale for large banks due to possible bureaucratic bottlenecks and managerial inefficiencies (e.g. Birhanu Tsehay, 2003 Ethiopian commercial banks, Aburime, 2008 on Nigeria banks and Ngo, 2006 Australian bank) implies that, larger banks tend to earn lower profits. On the researcher view banks which have a big size have an advantage of absorbing some credit risks which means that they have more opportunity to work in the fields which require high capital rates since they have much more resources and this situation provides them the opportunity to work in more profitable fields with little competition and have an advantage of absorbing some credit risks. Thus large banks have superior management and production technologies which able to lower down operational costs, therefore earned higher profits.

The researcher find coefficient of the variable representing Operational efficiency is positively and significantly affects the return on asset at 5% significant level. The operating efficiency measures efficiency of banks in generating operating revenues and in controlling operating expenses. It is used as an indicator of management's ability to control costs in order to generate revenue. Operational efficiency indicator is the expense variable and explains how banks could be efficient in resource allocation and utilization including human resource and technological improvements in banking since improved management of these expenses increase efficiency and therefore raise profits. The coefficient of the variable representing Operational efficiency (revenue to cost) ratio is positively and significantly affects the return on asset means that minimizing commercial banks costs in Ethiopia would certainly improve the commercial banks profitability . This positive relationship supported by the previous studies Odunga et al.(2013), Mirzaei, (2012) ,Soana (2011) and Alubel & Addis 2019) suggesting that maximum operational efficiency that attaining higher profit margins arises from efficiency which allows banks to obtain both good financial performance and market shares. Clearly, efficient cost

management is a prerequisite for improved profitability of banks. Cost management is the proxy variable for management quality. This highly significant and positive coefficient of the income to cost ratio shows the existence of efficient cost management system in Commercial Banks in Ethiopia. In contrary with this paper prior empirical evidence (e.g. Aburime, et.al 2008; Berger, 1995; Athanasoglou et al., 2005 and Guru et al., 2002) suggesting that operating efficiency was negative and significant effect on banks profitability. On the researcher view Operational Efficiency is a measure of task which is target to the delivering superiority services to customers in the most efficient behavior. Thus Efficiency is a measure of whether the right amount of resources has been used to deliver a process, service or activity. Efficiency is not only reducing cost, increasing profit, diversifying business and fulfilling other business objective but it also includes maintaining quality, providing services and retaining customers.

The researcher find coefficient of the variable representing capital adequacy is positively and significantly affects the return on asset at 5% significant level. The coefficient of capital adequacy which is measured by the equity to asset ratio was positive and statistically significant shows that an increase in capital adequacy result increased profitability. This is in line with the expectation as a bank with a sound capital position is able to pursue business opportunities more effectively and has more time and flexibility to deal with problems arising from unexpected losses, thus achieving in increase in profitability. This is supported with prior empirical evidence with the study of (Gemechu, 2016; Birehanu, 2012; Amdemikael, 2012; Samuel, 2015; Habtamu, 2012; Ermais, 2016 and Athanasoglou et al. 2008) that argues that capital has positive and significant impact on bank profitability. This indicates that well capitalized Ethiopian banks face lower costs of going bankrupt, which reduces their cost of funding or that they have lower needs for external funding which results in higher profitability. In contradiction Soana (2011), Ommeren (2011) argues that capital and bank profitability are negatively associated which means the coefficient of the ratio of equity to asset which was relatively higher as compared to other variables remains constant shows that an increase in capital adequacy will result in decrease profitability. So from the findings we can conclude as capital adequacy was one of the main determinants of profitability of banks in Ethiopia.

In general, the findings revealed that management efficiency, bank size and capital adequacy are the major significant determinants of the profitability on the commercial banks in Ethiopia. However, the output of regression model showed that the effect of loan to asset ratio, fund cost, liquidity risk ratio and debt management on profitability of commercial banks in Ethiopia is not significant for the period under consideration. The relationship between profitability and loan to asset ratio, management efficiency, liquidity risk, fund cost, bank size and capital adequacy were found to be positive and debt management was negative relationship.

5. Conclusions and recommendations

5.1 Conclusion

As per different empirical studies determinants of banks profitability has broadly classified into two categories which are internal or bank specific determinants and external determinants. However, the external determinants are beyond the control of the bank management. Even if the bank has no power to control the external determinants it's possible to boost the performance of the bank by controlling, identifying and making corrective action on the internal determinants of profitability.

The main objective of this study was to examine the determinant of profitability on commercial banks in Ethiopia a case of internal factor based on panel data analysis for the period 2010 to 2018. The data was analyzed by using fixed effect model and E-View 8 software.

The secondary data used in this analysis covered a period of 9 years from 2010 to 2018. The banks that were sampled were 13 as they provided complete data over the study period. The explanatory variables used in the regression models were mainly financial ratios. The basic Variables which were taken into consideration

are return on assets ratio (ROA), liquidity risk ratio (LRR), loan to total assets ratio (LAR), the size of the bank (LNSIZE), operating efficiency ratio (OER),fund cost(FDC),capital adequacy ratio(CAR)and Debt management(DM). Return on asset used as a proxy dependent variable to measure the profitability.

To comply with the objective of this research, the study also used an appropriate econometric methodology for the estimation of variables coefficient under fixed effect regression models. The quantitative data were mainly obtained from NBE through documentary analysis in order to identify and measure the determinants of banks profitability.

For testing the research hypotheses, a sample size of thirteen Ethiopian commercial banks were Selected and the necessary financial data were collected for the time period 2010 to 2018. The Empirical findings and the secondary data results on the determinant of commercial banks in Ethiopia a case of internal factor for the sample suggest the following conclusions.

The natural logarithm of total assets has a positive and significant effect on profitability in terms of return on asset at 5% significant level. This indicates that as larger banks of the country experience more significant increases in profitability through economies of scale. Economies of scale will reduce the cost of gathering and processing information. The larger the bank size, the more profitable the bank. It could also mean that bank size is associated with diversification which may affect favorably on risk and product portfolio .For large firms their size permits them to bargain more effectively administer prices and realize significant higher prices for the particular product which tends to earn higher profit.

Concerning operating efficiency (expense management), the results indicate that expenses management is positively and significant determinant of profitability on Commercial Banks in Ethiopia in terms of returns on asset. Since, expenses management is proxy for management quality, this significant and positively coefficient of the income to cost ratio shows the existence of efficient cost management system in commercial banks in Ethiopia. This indicates that minimizing commercial banks costs in Ethiopia would certainly improve the commercial banks profitability.

On the other side, the study found a capital adequacy ratio has positively and statistically significant effect on profitability of commercial banks in Ethiopia. These indicate banks with strong capital adequacy or keep the fund in the bank s financial strength shows the ability to tolerate with operational and abnormal losses. Thus, this positively and significantly is used to protect depositors and promote stability and efficiency of financial systems.

In general, the findings revealed that management efficiency, bank size and capital adequacy are the major significant determinants of the profitability on the commercial banks in Ethiopia. However, the output of regression model showed that the effect of loan to asset ratio, fund cost, liquidity risk ratio and debt management on profitability of commercial banks in Ethiopia is not significant for the period under consideration. The relationship between profitability and loan to asset ratio, management efficiency, liquidity risk, fund cost, bank size and capital adequacy were found to be positive and debt management was negative relationship.

5.2 Recommendations

In order to hold up risky surprises and maintaining financial stability, it is vital to identify the determinants that mostly influence the overall profitability of Commercial Banks in Ethiopia. Therefore, based on the findings of the study the following possible recommendations were forwarded:

Bank size, operating efficiency and capital adequacy are significant and key internal drivers of profitability on commercials banks in Ethiopia. Actually, focusing and redesign the firms together with these indicators could improve the profitability as well as the performance of the commercial banks in Ethiopia.

The study provides suggestion for managers to focus on properly managing the level of capital

adequacy positively statistically significant effect on profitability of commercial banks in Ethiopia this may indicates banks with strong capital adequacy or keep the fund in the bank financial strength may tolerate with operational and abnormal losses. This maybe protects depositors and promotes stability and efficiency of financial systems and which raise profitability.

The study provides suggestion for managers to focus on properly managing the level of operational efficient in resource allocation and utilization including human resource and technological improvements and other duplication of capital costs in banking since improved management of these expenses may increase efficiency and therefore raise profits.

The study provides suggestion for managers to focus on the level of bank size. The larger bank size may able to benefit from the superior management and the superior capabilities in product development, marketing, commercialization, financial scope, specialization, stronger bargaining power, stronger competitive power, bigger market share.

The study required to investigate the factors that influence profitability of commercial banks in Ethiopia a case of internal factor. Thus the study suggests that a further study may be done on the determinant of profitability on commercial banks in Ethiopia a case of internal factor by taking additional variables for the effect of technology and number of employee.

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