International Journal of Business and Economics Research
2022; 11(3): 123-139
http://www.sciencepublishinggroup.com/j/ijber
doi: 10.11648/j.ijber.20221103.14
ISSN: 2328-7543 (Print); ISSN: 2328-756X (Online)

Determinants of Banks Profitability of Commercial Banks in Ethiopia Facts from Ethiopian Commercial Banks

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To cite this article:
Segni Diriba Bosho. Determinants of Banks Profitability of Commercial Banks in Ethiopia Facts from Ethiopian Commercial Banks. *International Journal of Business and Economics Research.* Vol. 11, No. 3, 2022, pp. 123-139. doi: 10.11648/j.ijber.20221103.14

Received: March 18, 2022; **Accepted**: May 16, 2022; **Published**: June 8, 2022

Abstract: Profitability was the major determinant of banks profitability all over the world. The purpose of this study was to investigate determinants of commercial banks profitability in Ethiopia by using panel data of six (6) commercial banks from year 2010 to 2020. Prior studies a similar topic dis regarded certain determinants of profitability in Ethiopian banking industry. Hence the study filled the gap through assessing their influenced and profitability in economic banks. Accordingly capital adequacy credit risk, operating expense, tax payment, service charge and commission, other income, employment salary and benefit, interest income, non-interest income and real growth domestic product significantly influenced banks profitability in different direction. The study used multiple linear regressions models to investigate factors that determine the profitability of commercial banks. The study recommended that commercial bank in Ethiopia shall diverse their portfolio in order to maximize their level of profitability capital adequacy. To obtain information relevant to the study, secondary data was used. Besides in the study all commercial banks in Ethiopia were taken as study population and purposive sampling method was used to select sample unit. Furthermore the study suggested that banking industry in Ethiopia must be optimizing the level of service charge and commissions, credit risks. It is advisable if the banks broadly the level of implementation of digital banking system. The study to explore capital adequacy, interest income, non-interest income, bank service charge and commission were strongly and positive correlation with banking profitability in Ethiopia banking industry. However credit risk, tax payment and operating expenses have strong and negative correlation with Ethiopian commercial banks profitability. Farther researchers suggested examining the determinants of commercial banks profitability across the country.

Keywords: Profitability, Ordinary Least Square, Banks Specific, Macroeconomics, Commercial Banks

1. Introduction

These chapters start from research background to give an idea about the area of thesis to the readers. It followed by back ground of the study back ground of the study area, statement of the problem, objective of the study, research hypothesis, and significance of the study, scope of the study and finally organization of the paper was illustrated.

1.1. Background of the Study

In recent years the banking sector all around the world has experienced major transformation in its environment due to improvement in the requirement of financial services and high tech facilities, resulting in significant impacts on its profitability, Belayneh Hailegeorgis, 2011 et al. [8]. On the other hand, researches on the determinants of bank profitability were focused on both the returns on asset (ROA) to measure the profitability of banks, Fesha, 2018 et al. [9]. A lot of researchers have given a big attention on the profitability of the banking sector and their importance to economic growth of the country after the great economic depression is experienced in the United States of America in 1940s, Akhavein, J. O, Berger, A. N., & Humphrey, D. B (1997) et al. [3], In addition to this, Rasidah & Mohd [38]. states that after the USA mortgage crisis that happened recently in 2007-2009, the economy of USA as well as the growth of global economy has slowed down because of the poor performance of the banking industry. Banks are the critical part of financial system, play a pivotal role in contributing to a country's growth and economic development, however if the banking industry does not perform well, the negative effect to the economy could be huge and broad, Michael, 2017 et al. [42].

Similarly, Flamini et al. [11] empirically investigated the determinants of bank profitability in Sub-Saharan Africa between 1998 and 2006 using the panel data. With the aid of Arellano-Bond two-step Generalized Method of Moment (GMM), they found that variables such as bank size, activity diversification, and private ownership have a positive influence on the level of bank profitability (ROA) in the region. Also, their results revealed that returns on assets granger cause capital, implying that high returns are not instantly retained in the form of equity increases.

However, Pasiouras and Kosmidou [35]. analyzed the determinants of profitability in 584 commercial banks for selected fifteen European countries between 1995 and 2001 using a balanced panel dataset of 4,088 observations. They applied fixed effect estimation technique, and their findings indicated that all independent variables significantly influenced the level of profitability of both domestic and foreign banks. However, only the variable of concentration did not exhibit a significant influence in the case of domestic banks profit Mustapha, et al. 2017 [32].

Alkhazaleh & Almsafir, 2014 and Ally, 2014) and Macharia, et al. 2016. [1]. the banking sector profitability is also central as the well-being of the industry is closely associated with the wellness of the whole economy in general. Thus, a proficient and productive banking sector is able and better placed to endure negative economic shocks The study of Profitability became necessary not only because profits are key factor for growth but they also provide information about the economy. Changes in profitability are an important contributor to economic progress via the influence profits have on the investment and savings decisions of companies Ayanda, 2005 et al. [4].

This the case because improvement in profit leads for cash flow position improvement in the company and help for financing of the other wings in the sector, Tesfaye (B. 92014), Wondosen, 2018 et al. [43]. the determinants of Ethiopian commercial banks performance, European Journal of Business and management Vol. 6, no. 14, 2014.

Financial statements of both public and private banks operating in Ethiopia reveal that their profitability is increasing from year to year. A number of researches have examined the factors that determined the profitability of the banks. Both the internal and external factors are factors which determine the bank's profitability and operate change from time to time, Mustapha, A. M., Ekpo, I. C. & Aremu M. A. (2013) et al. [32].

Hence, the current research attempts to examine determinants of commercial banks profitability in Ethiopia. Many findings of different scholars on the same topic are inconsistent. Then this research is targeted to contribute to solve the inconsistent of those finding. In addition to this exclude by other researchers and this research incorporate this variables under external variable, Akhavein, J. O, Berger, A. N., & Humphrey, D. B (1997), [3].

Lastly many research, except Michael, are focused on both state owned and Commercial banks, which have different background, this research only focus on the determinants of commercial banks profitability in Ethiopia. The researcher was select six commercial banks based on their annual financial report and that have been operating at least since 11 years ago. This is owing to the fact that the research covers a period of 11 years from 2010-2020.

Various studies on ROA such as, Tekeste et al. [42]. Meshash [29]. Melaku et al. [28]. Karolina, V. and petr, T. m. [20]. and Gemechu [13]. were studied the Banks sector performance but not enough relative to the issue of the Banks industry Ethiopia.

Afterwards, prior studies had attested that the Banks profitability was affected by the magnitude of Banks capital adequacy, interest revenue, management expenses; credit risk, regulation, cost efficiency, competition, interest payment, scale efficiency, asset size, liquidity risk, loans and advances, market concentration, economic growth, interest rate, inflation and foreign exchange rate.

Since banks industry is one of the backbone of a country economy, the excessive as profitable unquestionable issue. Therefore, studying determinate factor for profitability of a banks industry is an important issue for developing country like Ethiopia. Mohammed, K. and Mohammed, A. (2014) et al. [30]. Determinants of Bank profitability Banks profitability is given a strong at elevation after the great economic depression is shown in the United States of America in 1940s. As a result of us mortgage crisis that happed recently in 2007-2009, the banks sector of many countries suffer a huge losses, especially us a and European union countries.

Gavila and Santabarbara [12]. indicated that too high profitability could be indicative of market power, especially by large banks. This may hinder the financial intermediation as banks exercising strong market power may offer lower returns on deposit but charge high interest rates on loans. too low profitability, in turn, might discourage private agents (depositors and shareholders) from conducting banks activities thus resulting in banks failing to attract enough capital to operate. Thereafter, this could provide that just poorly capitalized banks intermediate savings with the corresponding costs for sustainable economic growth Dawit (2017), et al. [10].

For the last three decades, the Ethiopian financial industry in general and banks industries in particular have shown an impressive progress in terms of number and service which not only creates the employment opportunities but also enhance the business activities in the economy of country. After 1974, the banks firm cannot move further because of the nationalization of private investments by the socialist regime that came into power leaving only three government banks; the national banks of Ethiopia, the commercial banks of Ethiopia and agricultural and industrial development banks (mortgage banks). Subsequently, the licensing and supervision of banks firm proclamation no. 84/1994 was issued in 1994, which led to the beginning of a new era for the growth of banks in Ethiopia. after the enactment of the proclamation private banks companies began to flourish, as result 12 private banks and one public owned commercial banks (excluding two non-commercial public owned banks which was development banks and construction and business banks) operating in Ethiopia. Monetary and banks proclamation, no. 83/1994 and, the licensing and supervision of banks business no. 84/1994 laid down the legal basis for investment in the banks sector.

As result, after the proclamation the first private banks, it was the international bank established in 1994 by 486 shareholders, and by 1998 the authorized capital of awash banks reached birr 50.0 million. Dashen banks were established on September 20, 1995 as a share company with an authorized and subscribed capital of birr 50.0 million. 131 shareholders with subscribed and authorized capital of 25.0 million and 50 million founded banks of abysinia. wegagen banks was established with an authorized capital of birr 60.0 million started the operation in 1997. The fifth private banks is united banks was established on 10th September, 1998 by 335 shareholders. nib international banks was started operation on may 26, 1999 with an authorized capital of birr 150.0 million and cooperative banks of oromia established on October 29, 2004 with an authorized capital of birr 22.0 million. Lion international banks with an authorized capital of birr 108 million started operation in October 02, 2006. Zemen banks that started operation on June 17, 2008, with an authorized capital of birr 87.0 million.

The last banks to be established to date is oromia international banks that started operation on september 18, 2008 with an authorized capital of birr 91 million. As the end sept-2017, no of banks operating in Ethiopia remained at 18, out of the 16 private banks, according to quarterly annual report of NBE in 2017/2018 report new branches opened and the total number of banks branches increases to 4461 and currently one branch gives service to 21651 people on average. From the total banks branch 34.4 percent are concentrated on addis ababa. The share of private banks was 67.5 percent, from the total banks branches in Ethiopia. The total capital of the banks sector in Ethiopia was reached to 80.2 billion birrs, represents 72.8 percent annual growth [20]. Determinants of bank fee income in the EU banking industry.

From the total capital the share of private Ethiopia banks accounted to 35.8 percent, and the remaining share is public banks, which is commercial banks and development banks of Ethiopia, stood at 64.2 percent and 9.6 percent in that order. Reserve money reached to 152 billion birrs in the first quarter of 2017/2018, this showing that a 24.5 percent growth over last year same period.

Table 1. *List of public and private Banks in Ethiopia with their market share.*

	Branch Network				
		Region	**Addis Ababa**	**Total**	**Share%**
S. N	Public Banks				
1	Commercial Banks of Ethiopia	1032	310	1342	30.1
2	Development Banks of Ethiopia	106	4	110	2.5
3	Total Public Banks	1138	314	1452	32.5
S. N	Private Banks				
1	Awash Banks	186	161	347	7.8
2	Dashen Banks	208	134	342	7.7
3	Abyssinian Banks	139	128	267	6
4	Wogagen Banks	154	98	252	5.6
5	United Banks	114	109	223	5
6	Nib International Banks	94	113	207	4.6
7	Cooperative Banks of Oromia	241	59	300	6.7
8	Lion International Banks	125	54	179	4
9	Oromia International Banks	165	74	239	5.4
10	Zemen Banks	12	11	23	0.5
11	Buna International Banks	88	72	160	3.6
12	Berhan International Banks	97	87	184	4.1
13	Abay Banks	112	45	157	3.5
14	Addis International Banks	23	33	56	1.3
15	Debub Global Banks	19	19	38	0.9
16	Enat Banks S.C.	12	23	35	0.8
17	Total private Banks	1789	1220	3009	67.5
18	Grand total of Banks	2927	1534	4461	100

Source: National Banks of Ethiopia quarterly Bulletin: First quarter 2022 G.C.

The overall, aforesaid matters boost the confidence of the researcher towards addressing the issue of banks profitability in the context of commercial banks in Ethiopia. By the same token, the current study focuses on investigating the determinants of profitability of commercial banks in Ethiopia.

1.2. Statement of the Problem

A financial system including banks industry is the backbone of an economic system of every nation; the appropriate operation and development of economic activities largely based on how well and sustainably financial systems work. One of the components of financial systems is financial sectors mainly commercial banks. This is because commercial banks are very important institutions which aid in the execution of socioeconomic activities undertaken by individuals, business organizations and even sovereign states. They serve primarily as a medium which viaducts the gap among excess and shortage spending units in an economy. this fundamental function of banks generate interest income which has over the years being their major source of revenue, since loans form a greater portion of the total assets of banks. These assets generate huge interest revenue for banks which to a huge amount determines their profitability. Mabvure et al. (2012), [25]. however, current market conditions have put a strain on the interest revenue as cost of borrowing funds have substantially raised and lending has become too competitive to provide worthwhile interest income. Kumar, et. al. 2006 [16].

Furthermore, the banks performance might be damaged by liquidity crunch, credit squeeze, increases in non-performing assets and default rates, reducing return from loans and investments, reduced market interest rates, and triggering contagious banks -run. In other words, commercial banks are likely to see decreases in profitability due to wide range of risks such as liquidity credit risk, risk, market risk, interest rate risk, capital adequacy such as operating expenses.

Thereafter the researcher more important initiated to investigate the determinants of banks profitability of commercial banks in Ethiopia because: commercial banks are the engine of economic growth as they are the dominant source for both long-term and short-term capital financing in the country, the role and power of commercial banks is immense in Ethiopia where the financial system is immature due to the absence of financial market, the lack of effective and adequate infrastructure, the unavailability of innovative and necessary financial instruments, and technology and innovation playing a limited role, commercial banks basically fuel the faster economic growth and damage to the financial mobilization process may cause momentous downside economic effects in Ethiopia, there was not sufficient study on examination of determinants of banks profitability in Ethiopia though the nature and products of banks industry are change from time to time. Munyamboner, et al.(2013), [31]. Determinants of commercial Bank profitability in sub-Saharan Africa, International Journal of economics and finance. There for the above mentioned facts boost to value of the conducting research in determinants of banking industry in Ethiopia.

1.3. Objective of the Study

General objective of the study

The general objective of this study was to investigate determinants of banks profitability of commercial banks in Ethiopia.

1.4. Research Hypothesis

The following hypothesis was developed to perform the objective of the study:-

HP1: There is significant positive relationship between capital adequacy and profitability.

HP2: There is significant positive relationship between liquidity risk and profitability.

HP3: Operating Expenses has a Positive significant effect on profit and Banks industry.

HP4: There is significant negative relationship between credit risk and profitability.

HP5: There is significant positive relationship between Banks size and profitability.

HP6: There is significant positive relationship between Service charge and commission and profitability.

HP7: There is significant positive relationship between Other Income and profitability.

HP8: There is significant negative relationship between Interest Income profitability.

HP9: There is significant Positive Relationship between Non interest income and Banks profitability.

HP10: There is significant positive relationship between real GDP growth and profitability.

HP11: There is significant positive relationship between tax payment and Profitability.

HP12: There is significant Positive Relationship between Employee salary and benefit and Banks Profitability.

1.5. Specific Objective of the Study

1. To identify the significant positive relationship between capital adequacy and profitability.
2. To explore the significant positive relationship between liquidity Risk and profitability.
3. To Identify the Operating Expenses has a Positive significant effect on profit and Banks industry.
4. To evaluate the significant negative relationship between credit risk and profitability.
5. To measure the significant positive relationship between Banks size and profitability.
6. To explore the significant positive relationship between Service charge and commission and profitability.
7. To explore significant positive relationship between Other Income and profitability.
8. To implement the significant negative relationship between Interest Income and profitability.
9. To evaluate the significant positive relationship between real GDP growth and profitability.
10. To identify the significant positive relationship between tax payment and Profitability.
11. To sustain the significant Positive Relationship between Employee salary and benefit and Banks Profitability.

1.6. Significant of the Study

The study is important to the government in determination and establishment of a stronger regulatory and legal framework for the banks industry in Ethiopia. The study was useful to the government in policymaking regarding the commercial banks assets quality management which was result to further protecting the depositors' funds while enhancing the commercial banks financial performance and stability.

The study was help various stake holders in banks mainly management and shareholders to identify gaps inherent in their financial institutions and find ways of improving their asset quality.

The findings of the study was enable the banks managers formulate strategies to enhance better management of their loans / assets portfolio in line with their growth strategies thereby maintaining high quality of their assets and realize their firm's maximization of wealth goals. It was further help financial institutions identify key risk areas in managing credit risk that was happen as a result of poor asset quality and also develop and implement a credit risk infrastructure to this research to assist in developing and implementing robust processes of monitoring and measuring asset quality in respective loan portfolios in relation to non-performing loans, banks loan growth and investment. the research was enable the government and other policy makers in the banks industry to devise new policies for regulating loans disbursements and come up with more effective methods of managing asset quality. Kenenisa, Lemi and Chawla, A. S., (2015), [22]. The effect of bank size and ownership on financial performance of Commercial banks in Ethiopia.

The study was also contributing new knowledge to the body of existing literature for academicians through its empirical tests on the linkage between asset quality and financial performance. It was therefore provide an avenue for further research on the variables in Ethiopia and other countries. Petria, N., Capraru, B. and Ihnatov, I. (2015), [36]. Determinants of Banks' profitability.

1.7. Limitations the Study

While conducting this study the study was limited to examine the determinants of six (6) commercial banks because of their financial report and conducting to the annual reports of the banks. This might was limits the generalizability of the findings to other parts of banks. The seconded one has the nature of the data some variables here excluded mentioned or unmentioned. The third one has the researchers might be limited by organizational published and unpublished documentary and sources of secondary materials was limited.

1.8. Scope of the Study

The scope of the study limited by Commercial Banks in Ethiopia. Depend on given Data reports from National Banks of Ethiopian (NBE) total Banking Services in Ethiopia Known as on June 30 of 2021 report, there are eighteen (18) Commercial Banks in Ethiopia including Commercial Banks of Ethiopia (CBE) and Development Banks of Ethiopia. Depend on the Investigators the study to considered eleven (11) years financial report of selected commercial Banks in Ethiopia namely, those are two (2) Public Banks of Commercial Banks of Ethiopia and Zemen International Banks and Sixteen (16) private Banks like that Awash International Banks (AIB), Dashen Banks (DB), Banks of Abyssinia (BOA), Wogagen Banks (WB) United Banks (UB), Nib International Banks (NIB), Zemen International Banks (ZIB), Cooperative Banks of Oromia (CBO), Lion International Banks (LIB), Zemen Banks (ZB), Oromia International Banks (OIB), Buna International Banks (BIB), Berhan International Banks (BIB), Abay Banks S.C (AB), Addis International Banks S.C, (AIB) Debub Global Banks S.C (DGB) and Enat Banks (EB). In addition to this the study was limited to a period eleven years from 2010 to 2021 GC. The profitability of Banks was assessed in terms of Capital adequacy, Liquidity Risk, Banks Size, Credit Risk, Operating Expense, Tax payment, Service charge and Commission, Other income, Employment Salary and benefit, Interest income, Non-interest income and Real GDP.

2. Review of Related Literature

2.1. Introduction

This chapter focuses on an examination prior work on the determinants of Banks profitability. In this part, the researcher discuss about theories on the Banks profitability, Empirical views, Conceptual frame works, determinants and to existing knowledge gap.

2.2. Theoretical Frame Work

In this chapter literatures from different sources was collected both theoretical literatures and empirical literatures. the theoretical review which include definition and meaning of banks, role and function of banks, theory of the banks firm and basic banks theory of profitability, theory of liquidity risk, theory of credit risk, risk and return hypothesis, banks raptly cost theory, economic scale hypothesis, portfolio and firm diversification theory and its impact on risk and return, macroeconomic and banks performance, measurement of profitability and empirical literature was gathered from outside Ethiopia and in Ethiopian context on determinant of banks profitability.

2.3. Portfolio Theory

On the portfolio diversification and firm diversification is divided based on different studies portfolio asset diversifications and firm business activity diversification based up on the literature about portfolio and firm diversification and its impact on risk and return theory. As study by Markowitz, H. (1952), [27]. study on the cyclical investment on portfolio literature. The selecting of investment assets for diversification, when investors are risk-adverse agents. The investor should allocate their entire asset in the high expected return. If the expected value of more than one asset is the same, then investing of more than one asset or combination of asset result the same effect on the return. However, the increase share of non-interest income, it increases the risk, without increasing their profitability.

Berger & Ofek [6]. stated that, firm activity diversification and profitability had negative relationship.

2.4. Sources of Banks's Income

2.4.1. Interest on Loans

The main function of a commercial Banks is to borrow money for the purpose of lending at a higher rate of interest. Banks grants various types of loans to the industrialists and traders. The yields from loans constitute the major portion of the income of a Banks. The Banks grant loans generally for short periods.

But now the Banks also advance call loans which can be called at a very short notice. Such loans are granted to share brokers and other Banks.

2.4.2. Interest on Investments

Banks also invest an important portion of their resources in government and other first class industrial securities. The interest and dividend received from time to time on these investments is a source of income for the Banks. Banks also earns some income when the market prices of these securities rise. Meshasha, D (2017), [29]. Determinants of Net Interest margin in the Ethiopia Banking Industry.

2.4.3. Discounts

Commercial Banks invest a part of their funds in bills of exchange by discounting them. Banks discount both foreign and inland bills of exchange, and in other words, they purchase the bills at discount and receive the full amount at the date of maturity.

2.4.4. Commission, Brokerage

Banks perform numerous services to their customers and charge commission, etc., for such services. Banks collect cheques, rents, dividends, etc. accepts bills of exchange, issue drafts and letters of credit and collects pensions and salaries on behalf of their customers. They pay insurance premiums, rents, taxes etc., on behalf of their customers.

For all these services Banks charge their commission. They also earn locker rents for providing safety vaults to their customers.

Recently the Banks have also started underwriting the shares and debentures issued by the joint stock companies for which they receive underwriting commission. Commercial Banks also deal in foreign exchange. They sell demand drafts, issue letters of credit and help remittance of funds in foreign countries.

2.4.5. Banks Dilemma

Banks dilemma is called profitability and liquidity dilemma. Banks to sustain their, they should satisfy the interest of three stakeholders; the depositors, the central Banks and the shareholders of the Banks. To satisfy the interest of the depositors, the Banks should hold much idle cash on their volt and whenever the depositors come they can meet the depositor's interest. But the main interest of the Banks's shareholders is to maximize profit. Banks profit is mainly done through loan and advances which is interest income difference between the loan they provided and the interest payment for deposited amount.

For the search of much profit if they give largest proportion of their deposit as loan, of course they can make profit and satisfy the shareholders. On the other hand, they were not have enough deposit to meet the depositors need as they come for withdrawing their money. In this regard, depositors lack trust on the Banks and was no more be the customer and deposit on the Banks. If this happen Banks lack sufficient loan able fund to make profit. Then its excise comes to the question, plus to the depositor's movement, the national Banks takes action on the Banks management to protect the public.

The mission and vision of the Banks being was stopped. To insure sustainable excise and meet its goal, Banks mangers always work to satisfy the three party's interest equitably. Mishikin (2008), [33].

2.4.6. Meaning of Profit

Profit is a simple concept but its level is determined by the complex interaction of a multitude of factors (Nugent, 1998). If we begin at the level of the firm the typical firm's profit (denoted by Π) in a simple competitive market model is defined by:

$$\Pi = TR - \omega . N - \rho . K$$

Where, TR is the total revenue (or total sales) of the firm. The firm's costs are represented by the wage bill (the wage rate, ω, times the workforce, N, of the firm) and the cost of capital (the rental cost of capital, ρ, multiplied by the capital stock of the firm, K) [28]. Determinants of Bank Profitability in Ethiopia.

2.4.7. Commercial Banks Profit

A commercial bank is a profit-seeking business firm, functions in money and credit. It is a financial institution dealing with money in the sense that it collects deposits of money from the public to keep for them in its custody for safety. Makkar, A. and Hardeep., (2018), [26]. Key factors influencing profitability of Indian commercial banks.

Also, it provides credit, i.e., creates credit by making loan and advances out of the funds received as deposits to those in need. Thus, banks are mobilized of money in the economy. Therefore, like a reservoir of idle surplus money of households and from which loans is given on interest to businessmen and others who need them for investment or productive uses. n. t. somashekar, (2009), [34]. This section examines how bank is conducted to earn the highest profits possible and assures its sustainability.

To assert the highest possible profit, the banks manager has four primary concerns. The first is to make sure that the banks has enough ready cash to pay its depositors when there is deposit outflow. To keep enough cash on hand, the banks must engage in liquidity management, the acquisition of sufficiently liquid assets to meet the Banks's obligations to depositors. Second, the banks manager must pursue an acceptably low level of risk by acquiring assets that have a low rate of default and by diversifying asset holdings (asset management. Ahmed Aref Almazari, (2013), [2].

Capital adequacy, cost income ratio and performance of Saudi Banks. International journal of academic research in Accounting, finance and management sciences, Vol. 3, No. 4, October 2013, pp. 284-293. The third concern is to acquire funds at low cost (liability management). Finally, the manager must decide the amount of capital the banks should maintain and then acquire the needed capital (capital adequacy management). In addition the banks managers give emphasize to credit risk, the risk arising because borrowers may default, and how it manages interest-rate risk, the riskiness of earnings and returns on banks assets those results from interest-rate changes. Mishikin (2008), [33]. Schipper [41], Kennedy [23], Guide to Econometrics, 6th edn, Blackwell published, and Laurynas [24], Malden and Kosmidou [23], the determinants of banks "profits in Greece during the period of EU financial Integration,). Bank profitability and Macro-Economy. Banks profitability determinants are distinguished as either being internal or external. Internal factors are those that effect a Banks's management and policy decisions. External determinants usually reflect factors that do not relate to Banks management practices. Instead, they reflect macroeconomic environment factors that affect the performance of financial institutions.

2.5. The Conceptual Framework

Different empirical studies suggested that banks specific, and macroeconomic variable are the major determinant factors that affect banks sector profitability. the past studies showily that the banks specific and macro- economic variable was used, such as liquidity risk banks size, credit risk, operating expense, tax payment, service charge and commission, other income, employment salary and benefit, interest income, non-interest income and real GDP.

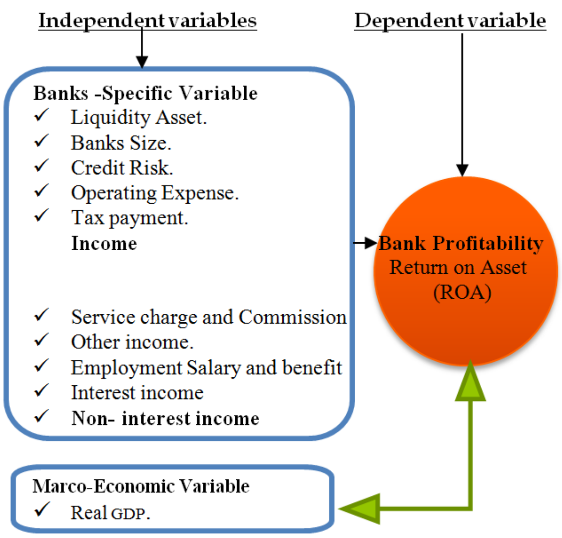

Figure 1. *Macroeconomic variable are the major determinant factors that affect banks sector profitability.*

Source: Developed by Researcher own computation based on Bank specific and macro variables 2022 G.C.

3. Research Methodology

3.1. Description of Study Area

The study was conducted at banks profitability of commercial banks. This study is located at Ethiopia by Ethiopian commercial banks. All commercial banks of Ethiopia administration head office was allocated at Addis Abeba Ethiopia and also for administrative purpose. the total boundaries of all commercial banks in Ethiopia country are to divided in to two ways; those are two (2) public banks and sixty (16) private banks.

3.2. Research Design

Based on the nature of the study the researcher used explanatory research design. The reason was that panel data allow a researcher to analyze several important economic questions that can be addressed using cross-sectional or time –series data sets.

3.3. Target Population

For the purpose of study the target population was all commercial banks registered by NBE and under operation in the country. Currently, in Ethiopia there are sixteen (16) commercial banks which are operating throughout the country NBE (2015/2016). but because lack of 11 years data that was required for the analysis purpose in most of the lately established private banks are exclude from the study so, the number of sample banks are reduced to six commercial banks including commercial bank of Ethiopia. The population of the study was included the six commercial banks in Ethiopia. Accordingly, the six commercial banks namely; Zemen Banks, awash banks, commercial banks of Ethiopia, Birhan International Banks Oromia International Banks, and Cooperative Banks of Oromia was selected for the study.

3.4. Sampling Design

Population refers to the entire group of people or things of interest that the researcher wishes to investigate. Sekaran, (2015), [40]. As at June, 30, 2021 there are 18 (Eighteen) Banks in Ethiopia. Among the Banks 16 N (Sixteen) are private and 2 (two) state owned. (www.nbe.et.net) Therefore, the target population for the research was comprises of the 17 (Seventeen) licensed commercial Banks in Ethiopia. The justification for this population is because of the fact that the information is readily accessible from websites, since it's a regulatory requirement for annually publication of financial statements by all commercial Banks in Ethiopia. In addition, due to the homogenous nature of the population sample observation for specific situation was applied and based on data drawn from sample commercial Banks generalization for the Banking sector of the Ethiopia was made.

3.5. Sample Size

Kothari and Gang [19]. asserts that sampling is that part of the statistical practice concerned with the selection of individual or observations in eleven to yield some knowledge about a population of concern, especially for the purpose of statistical inferences. They advise that a researcher was to use 30% of the total target population as a sample for it to be accepted as a good representative sample. Therefore, the sample size for the research to meet the objectives comprises of six (6) commercial Banks in Ethiopia and this includes Lion International Banks; Zemen banks, Awash Banks, commercial banks of Ethiopia, Brehan international banks Oromia international Banks, and Cooperative Banks of Oromia was to selected for the study. The data is collected regarding these six commercial Banks only for the period of 2010 to 2020.

To this end, the sample size of this study is not less than specified sample size required for one's study (30%) since the accuracy and validity of the works never guaranteed by increasing the sample size beyond specified limiT. Moreover the sample is adequate, based on the 1/10th principle. Therefore, increasing the number of sample size beyond the specified sample size required for ones' study never add value to the accuracy of the study rather it made information unmanageable due to redundancy. Ayalew, 2011) cited in Muluwork, (2014), [5].

Table 2. *Sample Size.*

Category	Target population	30%	Sample Size
Large sized	6	30%	2
Medium sized	5	30%	2
Small sized	6	30%	2
Total	17		6

Source: Researcher developed own computation based on Ethiopian Banks 2022 G.C.

NB;-The sample size to require for ones' study never add value to the accuracy of the study rather it made information unmanageable due to redundancy because of the Homogeneity of Banks Activities, Performance, Technology, and Methodology's are Categorized by Large Size, Medium, Size and Small Size.

3.6. Sampling Techniques

Sampling was the process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire population. The Sample design it deals with sample frame, sample size and sampling technique. John, (2007) cited in Gadise (2014), [18]. Sample was a small group of objects or Individual selected or drawn from a population in such characteristics. Kombo, (2013), [21]. Depend on June 30 of 2021; there are eighteen Banks in Ethiopia. These are commercial Banks of Ethiopia (CBE), Awash international Banks (AIB), Dashen Banks (DB), Banks of Abyssinia (BOA), Wogagen Banks (WB), United Banks (UB), Nib international Banks (NIB), Development Banks of Ethiopia, Cooperative Banks of Oromia, Lion international Banks, Zemen International Banks Oromia international Banks, Buna international Banks, Berhan international Banks Abay Banks S.C, Addis international Banks S.C, Debub global Banks S.C and Enat Banks.

However, from all the above listed type of banks, the total capital of the Banks industry is increased by 18.4 percent and reached Birr 101.5 Billion by the end of June 2021 (Commercial Banks of Ethiopia (CBE)=49.8B, Awash international Banks (AIB)=6.02B, Dashen Banks (DB)=5.21B, Banks of Abyssinia (BOA)=3.46B, Wogagen Banks (WB)=3.60B, United Banks (UB)=3.24B, Nib international Banks (NIB)=3.78B, Development Banks of Ethiopia=7.67B, Cooperative Banks of Oromia=2.50B, Lion international Banks =1.95B, Zemen Banks =1.79B, Oromia international Banks =2.85, Buna international Banks =2.04B, Berhan international Banks =2.40B, Abay Banks S.C=1.9 B, Addis international Banks S.C=0.90B, Debub global Banks S.C=0.780B and Enat Banks =1.3B) NBE Annual report 2018/19. In addition, National Banks of Ethiopia was planned to increase the minimum capital for Banks to operate to two (2) billion and all Banks are instructed to increase their capital to that amount (Publication of Ethiopian Banks system, 2021).

Depend on; Stratified/random sampling method was used to select the required sample Banks from the above listed commercial Banks. Bryman and Bell [7]. argue that stratified random sampling was where a given number of cases are randomly selected from each population sub-group. It thus ensures inclusion in the sample of subgroup which otherwise was omitted entirely by other sampling methods. In this research the selection criteria for stratification they were based on minimum capital requirement of National Banks of Ethiopia. Then the researcher divided his population into three segments on the basis of Banks capital called strata.

Depend on, Segment one called small sized and contains commercial Banks with total capital less than 2 (two) billion (Lion International Banks, Zemen Banks, Abay Banks, Addis International Banks, Debub Global Banks and Enat Banks Sc), segment two called medium sized and contains commercial Banks with total capital greater than or equal to 2 billion but less than or equal to 3.5 billion (Cooperative Banks of Oromia, Oromia International Banks, Berhan International Berhan International Banks, Banks of Abyssinia, Bunna international Banks and United Banks) and segment three called large sized and contains commercial Banks with total capital greater than 3.5 billion (Commercial Banks Of Ethiopia, Awash Banks, Wogagen Banks, NIB Banks, and Dashen Banks). Finally simple random was drawn from each stratum and then those sub-samples it was joined to form complete stratified sampling. In addition proportional allocation was done where each stratum contributed to the sample a number that is proportional to its size in the population.

3.7. Type and Source Data

The study employed the use of secondary data. A secondary source of data was preferred for the fact that it is easily available as well as less time and money is required to gather all the relevant information relating to the variables under study. Secondary source of data for Banks specific variables was collected from audited financial statements and annual report of Banks. Secondary data means data that are already available i.e., they refer to the data which have already been collected and analyzed by someone else. Secondary data may either be published data or unpublished data. The already available data should be used by the researcher only when he finds them Suitable, Measurable, Attainable, reliable, time framed and adequate. Kothari, (2004. p. 125), [19].

An interim to secondary data that has been used in the research was obtained from the annual reports of commercial Banks and national Banks of Ethiopia for eleven (11) years from the period of 2010 –to- 2021 and also these annual reports have been extracted from the website of commercial Banks and national Banks of Ethiopia. The Banks annual report was publications that publish annual financial statements while the national Banks of Ethiopia annual report publishes and analyzes Banks profitability of data annually.

3.8. Data Collection Methods

With the combination of time serious and cross sectional observation the study has utilized secondary data with time serious observation.

As time serious observation beyond a single frame in time, it was allow the researcher to gather data from the selected commercial banks repeatedly for a period of 2010 to 2021 to ensure homogeneity, the data has been drawn from the annual reports of commercial banks and national banks of Ethiopia. The bank's annual report was publications that publish annual banks profitability of data annually. While, the national banks of Ethiopia annual report publishes and banks profitability of data annually.

The NBE report has been used since they are published by the regulator in which the correctness of the data is assured. Meanwhile, the study has singled out data relevant to the research problem from these sources in line with the constructs that was prepared under investigation. Furthermore, systematic collection and analysis of factual data with the help of observational technique and physical measurement has been made by the researcher in order to achieve the desired objectives. This shall include data to measure the analyzes of banks profitability of data annually (net income, and total asset) and data to measure asset quality (loan loss provision or allowances for doubtful loan, total loan portfolio and total assets). Depend on arrangement of data in accordance with time of occurrence or chronological order was profitable for simplicity of data. Furthermore, before data can serve any worthwhile purpose e, the mass of data that was collected to describe the variables of the study and systematized and organized.

3.9. Method of Data Analysis and Presentation

After the necessary data Collection from secondary sources of the data was analyzed and presented using descriptive statistics, correlations and multiple linear regressions. The Mean values and standard deviations was used to analyze the general trend of the data from 2010 up to 2021 based on the selected six (6*)* Commercial Banks this includes*,* Zemen Banks, Awash Banks, Commercial Banks of Ethiopia, Brehan International Banks, Oromia International Banks, and Cooperative Banks of Oromia. Then the correlation matrix was used to investigate the relationship between the dependent variable and explanatory variable. A multiple linear regression model was used to determine the relative importance of each independent variable in influencing profitability.

As noted by Kothari [19, 15]. data was analyzed in line with the purpose of the research plan after data collection. Depend on secondary data collected from the annual reports of commercial banks and national banks of Ethiopia were analyzed to determine its suitability, reliability, adequacy and accuracy. The data was coded, checked and entered to simple excel program to make the data ready for analysis. Quantitative methods of data analysis with the help of descriptive and regression statistical tool (SPSS version 20, excel and access) is used to analyze the research variables because it goes further to test the theories in the theoretical framework behind the study and prove or disapprove it.

Moreover, this kind of a study enabled the researcher to go further and test of hypothesis. At the last the results of data analysis was discussed in line with the research objectives and some of the literatures presented on the objective. The outcome of the findings in accordance with the predefined study objectives later on has formed a basis for drawing conclusion and recommendation of this study.

4. Data Analysis and Presentation

4.1. Dependent Variables

Specifically to this study bank's profitability was measured by the ratio of the Return on total Assets (ROA), Return on Asset (ROA) as Golin [17]. points out, the ROA has emerged as key ratio for the evaluation of banks profitability and has become the most common measure of banks profitability. The following authors also used ROA as a measure of bank profitability. Yuqi Li [44]. and Belayneh [8]. The ROA reflects the ability of a bank's management to generate profits from the bank's assets. It shows the profits earned per birr of assets and indicates how effectively the bank's assets are managed to generate revenues, although it might be biased due to off-balance-sheet activities. Total assets were used in this study; in order to capture any differences that were occurred in assets during the fiscal year. ROA can be calculated as: ROA = Net Income/ Total Asset.

4.2. Independent Variables

This paper was used the major dimensions of a bank's operation: Capital Adequacy, Liquidity Risk, Banks Size, Credit Risk, Operating Expense, Tax payment, Service charge and Commission, Other income, Employment Salary and benefit, Interest income, Non-interest income and Real GDP.

Capital Adequacy: The ratio of operating expense to operating income had been used.

Liquidity risk: the ratio of total loans to total deposits had been used.

Bank size: in of total asset of the bank.

Credit Risk: The ratio of Creditors to total users has been used.

Operating Expense: The ratio of Interest expense to Total Deposit.

Tax Payment: The Interval of tax deduction to total Gross

Earnings.

Service Charge and Commission: The ratio of operating expenses of the each Banks.

Other Income: The percentage of income to the other beneficiary of the Banks.

Employment salary and Benefits; The ratio of Employees to use the percentage of each Banks.

Interest income: The average annual interest rate (in %).

Non-interest income: The average of Non-interest rate in %.

Real GDP: The yearly real Gross Domestic Product (GDP) growth rate had been used.

4.3. Data Validity and Reliability

To ensure validity and reliability of the data collected, only published data in the form of banks profitability which is a requirement by law was used. The board of directors of each commercial banks before publishing of any information, they have to attest to the validity and reliability and ensure that the statements show a true and fair view of the banks's financial position. The NBE supervisory reports were also used and since they are published by the regulator, the correctness of the data is assured.

4.4. Model Specification

A multiple linear regression model was used to determine the relative importance of each independent variable to determine banks profitability. The p-value of explanatory variables was used to test the hypotheses at a 1%, 5% and 10% significance level. Hence, based on the relationship among the above stated bank profitability indictors and explanatory or determinants of commercial banks profitability, the following model was serve as the basis for multiple regression analysis of the investigation.

The study also compared the fixed effect with random effect by using Housman test. As result of Housman test, the probability value (Prob>chi2=0.1454), which is greater than 0.05, so random effect is appropriate.

Finally random effect was compared from OLS by using Breusch and pagan Lagrangian multiplier test, as result of LM test the probability (Prob>Chi2=1.00) was greater than 0.05, so the appropriate model of this study was OLS regression model. OLS is used to estimate the linear regression and minimize the sum of the squared error, which is the difference between observed and predicted value.

Generally, the equation that account for individual explanatory variables was specified as a follow:

$$Yit = \alpha + \Sigma\ \beta Xit + \varepsilon it \tag{1}$$

Where, Yit is the profitability of Banks i, at time t, with i=1----9, t=1-----10, *α,* represents the intercept, β represents the regression coefficients for the explanatory variables, X is the explanatory variable and *εit*, is the error term.

The ROA model was adopted for the analysis is writeleven as a follow:

$$OAi,t = \alpha + \beta1(CAR)\ i,t + \beta2(LR)i,t + \beta3(CR)i,t + \beta4(FCI)i,t + \beta5(RD)i,t + \beta6(BS)i,t + \beta7(CIR)i,t + \beta8(RGDP)i,t + \beta9(PSI)\ i,t + \varepsilon it \tag{2}$$

The general model is:

$$ROA\ it = \alpha + \beta\ 1\ CAR + \beta\ 2LR + \beta\ 3BSit + \beta4CRit + + \beta5SCCit + \beta6IOIit + \beta7II + \beta8NII + \beta9RGDP + €it$$

Where;

ROA it = return on asset of bank I at time t i (i=1----9) and year t (t=1----10);

CA it = Capital adequacy of bank I at time t;

LQR it = Liquidity of bank I at time t;

BS it = size of the bank I at time t;

RGDP it = Real GDP growth rate at time t;

CR=Credit risk of bank I at t;

SCC it=Service Charge and Commission bank I at t;

OI it= Other income ESB; Employment Salary and Benefit bank I at t;

II it =Interest Income; of bank I at t;

NII it=Non-interest income bank I at t and €it= error term.

Where t = 2010-2020 GC i = constant for each bank (fixed effects),

α= bank specific factors coefficients,

β= internal and external factors coefficients.

4.5. Descriptive Statistics

In this subsection the descriptive statistics of dependent and independent variables for the selected sample commercial Banks of Ethiopia were presented in table 3. The observation of each variable was six, which is panel of eleven years and with cross section of six Banks. The table also shows the mean, standard deviation, maximum and minimum value of dependent variable return on Asset (ROA) and The other data are independent variables such as; (CA, LR, BS, CR, OE, TP, SCC, OI, ESB, II, NII and R GDP) from the year 2010-2020 was presented as a follow:

Table 3. *Summary Descriptive statistics.*

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	65	.488	.2891431	.02	.72
CA	65	.2298462	.2108427	0	.87
LR	65	.2032308	.2296676	0	.72
BS	65	3.759385	.5514891	2.16	4.66
CR	64	210.3109	552.1536	2	2944.22
OE	65	.0458462	.0584672	0	.21
TP	65	338.6198	877.3544	2.16	4302.62
SSC	65	.3367692	.2865915	0	.9
OI	65	.4890769	1.301182	0	10.57
ESB	65	.0458462	.0584672	0	.21
II	65	558.696	1469.851	0	8872.32
RGDP	65	282.5029	476.8543	.04	2336.25
NII	65	9.425538	1.700151	2.39	11.39

Source: Researcher result output based on the financial statement 2022 G.C.

The mean of return on asset (net income over total assets) of banks was 48% percent; this means the selected commercial banks of Ethiopia in last eleven years from 2010 up to 2021 was making profit of 0.289% cents on average per unit of one-birr investment on assets. The maximum of profit was 0.72% percent and the minimum loss was 0.02% cents per unit of investment on assets. The minimum loss of return on asset on this study is the inclusion of newly established banks, which means, they have high startup cost. The standard deviation of ROA was 0.28% percent, which indicates there is high profitability variation between commercial banks of Ethiopia within the study period. Capital adequacy ratio was used as proxy of equity to total asset to measure the capital risks of banks on average ratio of capital per total asset is 22% percent. This means Ethiopia commercial banks on average from the total asset 22% percent was financed by owners' equity, but the reaming 78 percent is financed by debt. The higher debt financing is not surprising because banks business is more focused on mobilize deposit from customer. The maximum amount of 87% percent is covered by capital while the minimum is 0.00% percent. The mean value 22% percent capital adequacy greater than capital requirement of 8 percent, set by NBE based on recommendation. Liquidity risk measure a ratio of total loan and advance to total deposit. On average 22.90% percent, this implies that on average from the sum of money mobilized thorough deposit 22.90 percent goes to total loan and advance.

The maximum loan per customer deposit is 0.72% percent. The minimum is 0.00% percent. There is high variation between banks in total loan and advance per customer deposit, which is 20.32% percent. the lower amount of loan to customer deposit the banks can result losses and the higher loan per customer deposit shows the ability of banks managers use the customer deposit to gain higher interest income. Credit risk was measured by loan loss provision over total loan. The mean value of for the credit risk is 10.31% percent; this indicates on average from the total loan 10.31% percent goes to loan loss provision. The maximum loan loss provision over total loan was 44.22% percent, while the minimum value is 2.00% percent.

The standard deviation was 52.15% (percent) which means theirs is high variation of loan loss provision over total loan between the selected banks. Service charge and commission income is measured by the ratio of service charge and commission over total income. The mean is 33.66% percent on average from the total income gained from service charge and commission income in Ethiopia commercial banks. The maximum 90% percent and minimum was zero (0) % (percent). In the standard deviation is high with 28.66% percent, with means theirs is high variation between the selected commercial banks in Ethiopia. Banks size measured as log of total assets of each banks.

The mean value of total asset of Ethiopian commercial banks was 3.75% the standard deviation is 55.14% percent, these shows, higher total asset variation between the selected samples. The maximum and minimum value takes 4.66 and 2.16 respectively.

Other income ratio of per total income is proxy of revenue diversification. the mean value for the banks other income per total income 48.88% percent, which indicates from total income 1.30% percent goes to other income and the maximum and minimum value takes 10.57% and minimum value was zero (0%) percent respectively. on the other hand, the highest interest was recorded. the higher other interest incomes over total income ratio indicate interest income streams and cross-selling capabilities and higher foreign exchange gain. On the other hand, cost income ratio measures the operating efficiency of banks, which is a proxy of operating expenses to gross income. On average 40% percent from their gross income goes to operating expenses. This means the higher banks non-interest income the high of profitability. The standard deviation was 76.85% percent; this shows of high variation of cost income ratio among banks in the sample under the study period. The maximum and minimum of cost income ratio is 36.25% percent and 0.04% percent respectively. The maximum of cost income ratio indicate newly established commercial banks of Ethiopia has high startup cost to operate the day activity of banks service.

On the macroeconomic variable, the average growth rate of real GDP was 9.42%percent for the last eleven years from 2010 to 2020.

The maximum and minimum real economic growth was 11.39% percent and 2.39% percent respectively. The standard deviation was 1.70% percent.

4.6. Assumption Tests of the Classical Linear Regression Model

Those assumptions were required to show the estimation could validly be conducted. Technique, ordinary least square (OLS), had number of desirable properties, and also so that hypothesis test regarding the coefficient estimates could validly conducted (Brooks, 2008). In order to provide more insights into the importance of the internal and external variable Banks determinant of whether this set of variables makes a significant contribution in explaining the variation in the dependent variable, for the purpose of this study, the panel data is checked diagnosed test of classical linear regression to assure the model specification are fit the CLRM, and also so that hypothesis tests regarding the coefficients estimates.

4.7. Regression Analysis

This section presents the empirical findings from the Malty leaner regression results on the determinants of profitability of commercial bank in Ethiopia.

The section covers the empirical regression model used in this study and results of the regression analysis. OLS time Source: Researcher result output based on the financial statement 2022 G.C. Series model used for the study is expressed as follows with only significant variables.

4.8. Multi - Collinearity Result

As noted by Brooks (2008) when using OLS estimation the explanatory variables are not correlated with one another. Therefore, the problem of multi-collinearity occurs when the explanatory variables are very highly correlated with each other. So in this study, the correlation analysis was conducted to show relationship between explanatory variables. Multi-collinearity means that of perfect or exact linear relationship among all explanatory variable. When there is high correlation between the predictors variable the regression coefficient is unreliable and unstable, but small degree of correlation between the explanatory variable was not loss the accuracy, otherwise it's difficult to tell which of them influence the dependent variable.

As a study explored by Guajarati [14]. occur multi-collinearity problem when the correlation matrixes is greater than 0.75 and 0.8 respectively. The other statistical tools to know correlation between the independents variable is variance inflation factor (VIF), as stated by, Guajarati [14]. if the VIF is below 10 there's no multi-collinearity problem. Therefore, in this study the variance inflation factors of all variable are below 10 and the highest correlation matrixes is between Banks size and capital adequacy ratio this is not series correlation as per the above discussion, so it is concluded that there is no multi-collinearity problem on this study.

4.9. Prison Correlation Method Data Out Puts

The Data Correlation Dependent: Return on assets of the banks and Independent Variables Capital Adequacy, Liquidity Risk, Bank Size, Credit Risk, Operating Expenses, Tax Payment, Service Charge and Commission, Other income, Employee salary and Benefit, Interest Income, Non-Interest Income and Real GDP.

Table 4. *Correlation Matrix between the Independent Variables.*

Varb.	ROA	CA	IR	BS	CR	OE	TP	SSC	OI	ESB	II	RGDP	NII
ROA	1.0000												
CA	0.5904	1.0000											
LR	-.4980	-0.2144	1.0000										
BS	-.3613	-0.1531	0.0475	1.0000									
CR	0.1736	0.0381	-0.2355	0.2348	1.0000								
OE	0.1917	0.1545	-0.3799	0.1575	0.4513	1.0000							
TP	0.1885	0.0712	-0.2455	0.2169	0.9812	0.4204	1.0000						
SSC	0.5691	0.4526	-0.2745	-.1655	-0.1447	0.0555	-.1019	1.0000					
OI	0.2227	-0.0163	0.0197	-.0220	-0.0758	-.0595	-.0679	0.3579	1.0000				
ESB	0.1917	0.1545	-0.3799	0.1575	0.4513	1.0000	0.4204	0.0555	-.0595	1.0000			
II	0.0920	-0.0765	-0.2002	0.2455	0.7984	0.4488	0.7433	-.1110	-.0695	0.4488	1.0000		
RGDP	0.0120	-0.0968	-0.1216	0.1715	0.0332	0.0492	0.0295	0.0029	-.0701	0.0492	0.2287	1.0000	
NII	0.2851	0.1165	-0.1787	-.1773	-.0507	0.0528	-.0358	-.0258	0.0315	0.0528	-.1473	-.0732	1.0000

Source: Researcher output result based on the financial statement 2022 G.C.

4.10. Correlation Analysis and Interpretation

The sample size of the study was 10*10 matrixes of 100 observations which was 100 hence the study used the above justification for significance of the correlation coefficient. Table 5 bellow shows the correlation coefficient between the dependent variables and independent variables. With our Banks specific and external variable, Capital Adequacy, Liquidity Risk, Banks Size, Operating Expense, Tax payment, Service charge and Commission, Other income, Employment Salary and benefit, Interest income, Non-interest income and Real GDP. Service Charge and Commission were the most positively correlated variable with ROA.

Hence this shows that, as the Service Charge and commissions interest income, of the profitability of Banks also increases and credit risk, operating expenses was strongly negative correlated with ROA, which means, credit risk, operating expenses and tax payment has inverse relationship with ROA.

On the other hand, the ratio of total loan to total deposit (LR) and Liquidity Risk seems to be inversely correlated with the ROA. Also Capital Adequacy, Service Charge and Commission, other income, Employee salary and benefits, bank size, Interest income, Non-Interest income and RGDP index has positively correlated with profitability.

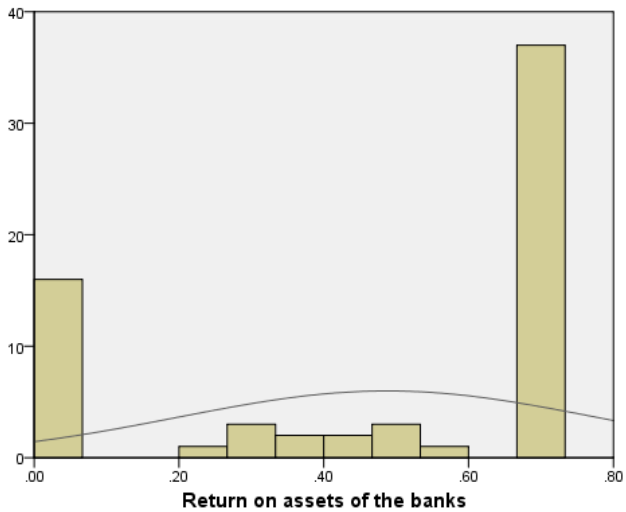

Figure 2. *Histogram for normality test.*

Source: Researcher own computation based on the financial statement 2022 G.C.

Variable Entered/Removed of Commercial Banks in Ethiopia.

Table 5. *Variables Entered /Removed commercial banks in Ethiopia.*

Variables Entered/Removed			
Model	**Variables Entered**	**Variables Re**	**Method**
1	Liquid, Service Charge and Commission, Non-Interest Income, Employee salary and Benefit, Bank Size, Other income, Tax Payment, Liquidity Risk, Capital Adequacy Interest Income, Credit Risk	.	Enter
Dependent Variable: Return on assets of the banks			
Tolerance =.000 limits reached.			

Source: Researcher data entered and removed result based on the financial statement 2022 G.C.

Table 6. *Model summery of banks commercial banks in Ethiopia.*

Source	SS	df	MS	Number of obs	=	64
		F(11, 52)	=	12.20		
Model	3.81671309	11	.346973918	Prob > F	=	0.0000
Residual	1.4792619	52	.028447344	R-squared	=	0.7207
		Adj R-squared	=	0.6616		
Total	5.29597499	63	.084063095	Root MSE	=	.16866

Source: Researcher own computation based on the financial statement 2022 G.C.

Table 7. *ANOVE regression commercial banks in Ethiopia.*

ANOVAa						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	3.801	11	.346	12.171	.000b
	Residual	1.476	52	.028		
	Total	5.278	63			
a. Dependent Variable: Return on assets of the banks						
b. Predictors: (Constant), Liquid, Service Charge and Commission, Non-Interest Income, Employee salary and Benefit, Bank Size, Other income, Tax Payment, Liquidity Risk, Capital Adequacy Interest Income, Credit Risk.						

Source: Researcher ANOVA result based on the financial statement 2022 G.C.

4.10.1. Ordinary Least Square Regression

The general objective of these study is determinants of Banks profitability in Ethiopia in order to achieve the study panel data of eleven years from selected six commercial Banks in Ethiopia was used. Before running the regressions, the data sets were checked under certain assumption of classical linear regression model (CLRM). Like, test of Normality, multi collinearity, heteroscedasticity, and autocorrelation was done to make the OLS model is BLUE.

Additionally, model specification tests have been made to satisfy the assumptions and to undertake reliable estimations. Overall, the tests have been in line with the CLRM. OLS regression is type of linear regression to estimate the unknown parameters. OLS regression model is consists eleven t, when the repressor's were exogenous and the error is homoscedastic as well as serially uncorrelated. In addition the errors are normally distributed. Therefore, to satisfy the objective of the study OLS regression model was employed.

4.10.2. Regression Analysis Result (ROA) as a Dependent Variable

Table 8. *Regression analysis result.*

VARIABLE	DY/DX	STD. ERR.	T	P>Z	[95% C. I.]		X
CA	.5293501	.13064	4.05	0.000	.273291	.78541	.219844
LR	-.3227001	.10903	-2.96	0.003	-.536402	-.108999	.206094
II	-4.32e-06	.00003	-0.15	0.878	-.000059	.000051	565.556
CR	.0004097	.00025	1.63	0.103	-.000082	.000902	210.311
TP	-.0001697	.00014	-1.22	0.221	-.000441	.000102	343.185
SSC	.3087611	.09973	3.10	0.002	.113287	.504236	.338281
OI	.0301151	.0181	1.66	0.096	-.005365	.065595	.492969
ESB	-.3314136	.46324	-0.72	0.474	-1.23935	.576524	.04375
BS	.1456882	.04156	-3.51	0.000	.227139	.064237	3.75344
RGDP	.0000498	.00005	1.03	0.304	-.000045	.000145	283.721
NII	.0303794	.0133	2.28	0.022	.004311	.056448	9.41016

Source: Researcher owns regression result based on the financial statement 2022 G.C.

Number of observation=65.
R-squared =66.16%).
Notes: *1% significance level; ** 5% significance level and *** 10% significance level.
Discussion of the result CA, LR, II, CR, TP, SSC, OI, ESB, BS, RGDP, NII.

In order to identify the factors that can determine Banks profitability in Ethiopian the underlines model was;

Provided as follows: ROA = β0 + (β1) CA + (β2) LR + (β3) II + (β4) CR + (β5) TP + (β6) SCC + (β7) OI + (β8) ESB+ (β9) BS + (β10) RGDP +NII+ e (3)

From the above tables, the researcher found the following estimated regression.

ROA = 0.529 (LR) + 0.3227 (CA) + -4.32 (II) +.0040 (CR) + -.0001697 (TP) +.3087 (SCC) + 0301 (OI) + -.331 (ESB) +.1456 (BS) +.000049 (RGDP) +.0303794 (II) + e (4)

(0.529) (0.3227) (-4.32) (.0040) (-.0001697) (.3087) (0301) (-.331) (.1456) (.000049) (.0303794)

From the above regression result, the r-squared and adjusted r-square was 72.07% and 66.16% respectively. This shows that 66.16% of the variations in the ROA of the commercial banks in Ethiopia are explained by the independent variables included in the study. The reaming 33.84% was explained by other factors which are not included in the model.

In addition, the probability of f (12.171) proves that the null hypothesis that all of the slope parameters are jointly 12.171 is accepted indicating that the slopes are insignificantly different than zero and strong statistical significance of the specified model this enhanced its reliability and validity.

The regression result shows that; capital adequacy, liquidity risk, banks size, credit risk, operating expense, tax payment, service charge and commission, other income, employment salary and benefit, interest income, non-interest income and real GDP growth rate where regressed against return on asset. However, liquidity risk and bank size had statistically negative impact on banks profitability as a proxy of ROA. However, real GDP growth rate had significant relation on profitability commercial banks of Ethiopia within the study period between 2010-2020. the output also shows that the coefficient of; capital adequacy credit risk, operating expense, tax payment, service charge and commission, other income, employment salary and benefit, interest income, non-interest income and real GDP were positive with the coefficients of; 0.529 0.3227 -4.32.0040 -.0001697.3087 0301 -.331.1456.000049 and. 0303794 and respectively. This shows that, ROA, and the aforementioned five independent variables have direct relationship.

As result increase those variables was lead to increase return on asset as well as the coefficient of income ratio and credit risk, operating expenses, and tax payment had negative impact on Commercial Banks profitability with the coefficient of (-.0001697 and. 0040) respectively. This clearly describe that there is inverse relationship between the two explanatory and ROA. On the other hand, the macroeconomic variable such as real economic growth has inverse relationship with ROA of commercial Banks of Ethiopia with the coefficient of 0.000049.

Table 9. *Hypothesized and Observed sign of the explanatory variables.*

Explanatory Variables	Measurement	Hypothesized Sign	Observed Sign
Return on assets of the banks (ROA)	Total loan/total deposit	Positive	Positive
Capital Adequacy (CA)	Equity/Total asset	Positive	Positive
Liquidity Risk (LR)	Log of total asset	Negative	Negative
Bank Size (BS)	Fee and commission income/total income	Positive	Positive
Credit Risk (CR)	Other interest income over total income	Negative	Negative
Operating Expenses (OE)	Operating Expenses Over Gross Income	Negative	Negative
Tax Payment (TP)	Total Earning *tax rate_ tax deduction	Negative	Negative
Service Charge and Commission (SCC)	Service Charge $ commission /total income	Positive	Positive
Other income (OI)	Operating Expenses /Gross Income	Positive	Positive
Employee salary and Benefit (ESB)	Net profit + other income	Positive	negative
Interest Income (II)	Total deposit *rate *time duration	Positive	positive
Non-interest Income (NII)	Total deposit _rate time *duration	Positive	Positive
Real Gross Domestic Product (RGDP)	Real GDP Growth rate	Positive	Positive

Source: Researcher own result interpretation based on the financial statement 2022 G.C.

NB;- Real GDP growth rate and political stability index insignificant impact on the performance of commercial Banks of Ethiopia and all Banks specific variable significant impact on ROA.

5. Summary, Conclusion and Recommendation

5.1. Conclusions of Finding

The empirical findings of the determinants of profitability of commercial bank of Ethiopia for suggests following conclusions. The main purpose of this study was to find out the most important internal factors that are affecting the profitability of commercial bank in Ethiopia. The necessary data was collected from secondary sources. Financial ratios were calculated and statistical tools including; (percentages, averages, the natural logarithm, correlation, descriptive analysis of variance and regression analysis) were utilized in testing the hypotheses. As a result, this study investigates the effects of internal determinants of profitability on commercial bank of Ethiopia over the period 2010 to 2020. The study used secondary time series data collected from the National Bank of Ethiopia and websites of the bank. The regression analysis was done using the Ordinary Least Squares.

Credit risk, tax payment and operating expenses have strong and negative significant effect on profitability of the bank. This negative correlation is suggesting that when asset of the bank is increasing, it earning lower profit through diseconomies of scale. The commercial bank of Ethiopia is still losing from diseconomies of scale. From this result the researcher concludes the bank is losing from large; Credit risk, tax payment and operating expenses it owns. Therefore Credit risk, tax payment and operating expenses of the bank was an important factor in determining profitability of commercial banks in Ethiopia. Credit risk, tax payment and operating expense has significant negative effect on profitability of the banks. According to the result, best performing bank operates at lowest noninterest expense. Decreasing noninterest (operational, and tax payment) expense is decreasing costs and increasing profitability. The researcher concludes that banks that lower noninterest expense earns higher profit than that do not. Therefore, Credit risk, tax payment and operating expenses has among major determinants of the profitability of the bank. This suggests have possibility for commercial banks to increase their profits by putting more effort on proper costs control and operating efficiency. This can be achieved by finding ways of optimal utilization of bank resources during production of banking products and services.

However, further research is needed to clear the grey areas especially over a longer period of time.

Interest income has significant positive effect on profitability of the bank. According to the result, the performance of the bank is best, it collects highest interest income. Increasing interest income is increasing net income of the bank and increasing its profitability. The researcher concludes that when the bank that increases its interest income, it earns higher. Therefore, interest income is among major determinants of the profitability of the bank that it significantly determines performance of the bank.

This suggests that there is possibility for the banks to increase its profits by putting more effort to increase interest income. This can be achieved by finding ways of optimal utilization of bank resources deposits and reducing non-performing loan. However, further research is needed to clear the grey areas especially over a longer period of time and including other banks. Capital adequacy, interest income, non-interest income, bank service charge and commission were strongly and positive significant effect on profitability of the bank. This positive relationship is suggesting that when return on asset of the bank is increasing, it earning higher profit. The commercial bank of Ethiopia is still gaining from; interest income, and bank service charge and commission. From this result the researcher concludes the bank is gaining from interest income, and bank service charge and commission. Therefore, interest income and bank service charge and commission strategy is successful in determining profitability of the bank.

5.2. Summary of Finding

This study is conducted with title of determinants of profitability of commercial banks in Ethiopia with the case study of commercial bank of Ethiopia. This is bank most profitable bank in the country. The study intended to identify significant internal determinants of the banks by using data of 11 years from 2010 to 2020 from this most profitable bank. The researcher developed relevant research questions to reach the objective. In addition to this, hypothesis was developed. As the descriptive research, the study used descriptive analysis for the data presentation and result discussion of the study. The researcher collected quantitative data from National Bank of Ethiopia and Commercial Bank of Ethiopia. The researcher used Ordinary Least Square method for regression analysis. Return on asset is used as dependent variable in order to measure profitability of the bank. Capital adequacy, liquidity risk, banks size, credit risk, operating expense, tax payment, service charge and commission, other income, employment salary and benefit, interest income, non-interest income and real gross domestic product are used as independent variable. The independent variables are interred in to the model by natural logarithmic form. The findings revealed that the study to explore capital adequacy, interest income, non-interest income, bank service charge and commission were strongly and positive correlation with banking profitability in Ethiopia banking industry. According to this study credit risk, tax payment and operating expenses have strong and negative correlation with Ethiopian commercial banks profitability effect. All independent variables are significant at the 1%*, 5% and 10*** level of the regression with the predictions. This significance suggests that the credit risk, tax payment and operating expenses have strong and negative relationship with Ethiopian commercial banks profitability are important in jointly determining the profitability of commercial bank of Ethiopia.

5.3. Recommendation of Finding

It is advisable if the banks divisible their portfolio. The bank shall reduce; Credit risk, by carefully assessing the capital, collateral, capacity, condition and characters, of borrowers before to providing to loan to them. Regarding liquidity the bank shall optimize the relationship between profitability and way. Credit risk, operating expenses and tax payment were strong and negative significant among the main determinants of profitability of the bank. It was increasing from year to year. The bank was costing from Credit risk, tax payment and operating expenses. The study shows Credit risk, tax payment and operating expenses have reaching to uncontrollable size. i.e. It was creating diseconomies. The bank has to use existing Credit risk, tax payment and operating expenses was rather than purchasing the new. Management of the bank has to focus on Credit risk, tax payment and operating expenses management instead of increasing the size. According to the study Credit risk, tax payment and operating expenses and return on asset of the bank are inversely related. The Credit risk, tax payment and operating expenses have not properly managed. As the study shows interest income, and bank service charge and commission was significant factor of profitability of the bank.

The results also confirmed that improvement in interest income, and bank service charge and commission of commercial bank in Ethiopia lead to higher profits. Main source of income for commercial banks was interest income, and bank service charge and commission. Commercial banks are diversifying to other income sources such as other income and non-interest income. But this source was not significant in this study. Interest income, and bank service charge and commission were collected by giving loan and advances. It was not easily achievable because there must be loanable deposit such as time deposit. And mobilizing this deposit has not easy task. The bank was recommended to increase on interest income and bank service charge and commission by providing loan and improving loan collection mechanisms such as lending for feasible projects and holding collateral.

Operating expenses are significantly decreasing profitability of the bank. The bank has to decrease unnecessary expenses by investing on efficient management and in technologies that reduce costs of operations in order to enhance their performance. Tax payment has significantly decreasing profitability of the bank. The bank have to decreasing un expected governmental tax expenses during the Tax category and limitation of tax deduction to minimizing the governmental tax payments through the levels of their performance.

Branch expansion was significantly affecting profitability of the bank. It one of the main strategies used by the bank to increase its performance by the bank more accessible to the existing and new customers. But branch expansion comes with credit risk, tax payment and operating expenses that has negative impact on profitability of the bank. The bank has to expand branches by efficient management and in technologies. Therefore, the bank has to increase branches without significantly increasing an asset.

5.4. Suggestion for Further Researchers

Finally this research was the determinants of banks profitability of commercial banks in Ethiopia.

On this study all commercial Banks was not considered. Only six (6) commercial Banks have been selected as a sample to assess the effect of the chosen variable. The furtherer researcher must include industry specific variable such as operating expense, tax, payment, service charge and commission, other income, employment salary and benefit, Banks industry growth and other macroeconomic variable, such as, other income, interest.

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