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BAHIR DAR UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICSE

DEPARTMENT OF ACCOUNTING AND FINANCE

POSTGRADUATE PROGRAM

**DETERMINANTS OF FINANCIAL PERFORMANCE OF INTEREST FREE BANKING
SERVICE OF SELECTED COMMERCIAL BANKS IN ETHIOPIA**

BY: ENDRIS YIMER

JULY, 2022

BAHIR DAR, ETHIOPIA

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POSTGRADUATE PROGRAM

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**A THESIS IS SUBMITTED TO BAHIR DAR UNIVERSITY, COLLEGE OF BUSINESS
AND ECONOMICSE, DEPARTMENT OF ACCOUNTING AND FINANCE IN
PARTIAL FULFILLMENT OF THE REQUIRMENT FOR THE DEGREE OF
MASTERS OF SCINCE IN ACCOUNTING & FINANCE**

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JULY, 2022

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Declaration

This is to certify that the thesis entitled “**Determinants of Financial Performance of Interest Free Banking Service of Selected Commercial Banks in Ethiopia**”, submitted in partial fulfillment of the requirements for the Master of science in Accounting and Finance of Department of Accounting and Finance, Bahir Dar University, is a record of original work carried out by me and has never been submitted to this or any other institution to get any other degree or certificates. The assistance and help I received during the course of this investigation have been duly acknowledged.

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APPROVAL OF THESIS FOR DEFENSE RESULT

As members of the board of examiners, we examined this thesis entitled “Determinants of Financial Performance of Interest Free Banking Service of Selected Commercial Banks in Ethiopia” by Endris Yimer. We hereby certify that the thesis is accepted for fulfilling the requirements for the award of the degree of “Masters of science in accounting and finance”.

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Acronyms and Abbreviations

CBE: Commercial Bank of Ethiopia

CBO: Cooperative Bank of Oromia

DM: Deposit Mobilization

GDP: Gross Domestic Product

IB: Islamic Banking

IFDR: Islamic Finance Development Report

IFB: Interest Free Banking

IMF: International Monetary Fund

LIQU: Liquidity

ME: Management Efficiency

NBE: National Bank of Ethiopia

OIB: Oromia International Bank

PLS: Profit and Loss sharing

ROA: Return on Asset

UB: United Bank

VIF: Variance inflation factor

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Abstract

Interest free banking is among the fastest developing business over the globe and become an important part of the financial system in many countries. It is a system of banking or banking activity that is consistent with Islamic law (Shariah) and guided by Islamic economics. In Ethiopia interest free banking has started since 2013. The main aim of this study was to examine determinants of financial performance of interest free banking service of selected Commercial banks in Ethiopia. To achieve this objective the study used 6 years balanced panel data of four purposely selected commercial banks which are the pioneer in starting IFB service and which separately recorded data from the year 2015/16 to 2020/21. The study used secondary data that collected from annual report of banks, national bank of Ethiopia and IFB department. In addition, quantitative research approach and explanatory research design were employed in the study. Fixed effect regression model was adopted in the study and the data was regressed by using Stata software. Thus, the result of the study indicated that liquidity has positive and significant impact on the financial performance of interest free banking service of selected commercial banks in Ethiopia. However, the remaining variables deposit mobilization, operating efficiency, bank size, management efficiency and GDP did not show a statistically significant relationship with financial performance of selected banks. Finally, the researcher recommended that interest free banking service of these commercial banks should emphasize or give more attention to the liquidity of the banks so as to improve their profitability.

Key words: Interest free banking, financial performance, Commercial Banks, Ethiopia

Chapter one: Introduction

This study tries to examine the determinants of financial performance of interest free banking service of selected commercial banks in Ethiopia. This chapter deals with the background, problem, objectives, hypothesis, significance, scope, limitation and organization of the study.

1.1 Background of The study

A dynamic role of banks as financial intermediaries in the economy of a country can be seen as a major resource allocator of a state, as they transfer deposited money from depositors to investors continuously. In addition to their intermediary function the financial performance of banks has serious implications for economic growth of the counties (Dawit, 2016). Thus, achieving sound financial performance is the ultimate goal of commercial banks.

Interest plays a major role in financial resource allocation in conventional banking since, banks pay interest to depositors and charge interest for loans advanced (Salah, 2009). Hence, interest is seen as price of money or return on capital. According to Salah (2009) Islam and capitalism both agree that money is used as a store of wealth and also as a means of exchange. Islam, however, unlike capitalism does not view money as a commodity which can be bought and sold at a profit

Interest free banking (IFB) is also commonly known as Islamic banking and the term “Islamic banking” refers to a system of banking or banking activity that is consistent with Islamic law (Shariah) and guided by Islamic economics. In particular, Islamic law prohibits usury i.e. the collection and payment of interest, also commonly called Riba (Edwin M Egboro , 2014).

Islamic bank was introduced firstly in Mit Ghamar in Egypt in 1963 (Chapra, 2001). Since firstly it was established in 1963, Islamic banks have gained a footing in almost every majority Muslim country and in a few non-Muslim countries (Haron, 2004). As of 2019, there were 526 Islamic banks including windows across the globe, according to Islamic Finance Development Report (IFDR, 2020) Islamic banking is the largest sector in the Islamic finance industry between 2012 and 2019, globally Islamic financial assets grew from 1.7 trillion dollars to 2.8 trillion dollars; from which global Islamic banking asset contribute 69% or 2 trillion dollars in 2019. Based on this report Share of Islamic banking assets in total global banking assets was 6% in 2019.

Nowadays, many countries are experiencing “Dual banking” system where interest-free banks operate along with conventional banks by opening a separate window for the specified service (Kerima, 2016). Ethiopia is the second most populous country in the Africa about 33.9 percent are Muslims (www.theodora.com/wfb January 27, 2020), that provides substantial potential for interest free banking services in the country.

Hence, to satisfy the Muslim community, National Bank of Ethiopia identified the huge demand for Interest free banking service and authorized banks to conduct IFB business in year 2011 on directive number SBB/51/2011. Interest-free banking in Ethiopia started in 2013 following this authorization. However, the directive has only opened the door for existing commercial banks to create an interest-free banking window alongside their operations and prohibited the establishment of full-fledged Islamic financial institution. The pioneering bank to get a license to conduct interest free banking service is Oromiya International bank in September 16, 2013 and just on September 17, 2013, Commercial Bank of Ethiopia took license to engage in Interest Free Banking operation (Teferi, 2015).

National Bank of Ethiopia amend directive number SBB/51/2011 by a new directive called a directive number SBB/72/2019 on June 18, 2019 to allow banks in Ethiopia to conduct interest free Banking operation using the full-fledged banking system. Based on this directive, conventional banks like Commercial bank of Ethiopia, Awash bank, oromia international bank, united bank, Abyssinia bank and others started to provide this service in branch level.

Moreover, Zamzam Bank the first full-fledged interest-free bank in Ethiopia has been officially launched, following its obtaining of operational license from the National Bank of Ethiopia (<https://www.2merkato.com> June 4, 2021). Hijira bank S.C has also got a green light to its founding board of directors (ADDIS BIZ.com; October 12, 2020). Currently, according to each bank's website as June 2022 from a total of above 18 state-owned and private banks in Ethiopia, 12 banks had accepted license to provide interest-free banking services.

Suadiq & Ibrahim (2020) stated that the growth of IFB Window deposit mobilization from 2018 to 2019 Commercial Bank of Ethiopia (CBE), Cooperative Bank of Oromia (CBO) and Oromia International Bank (OIB) was 78.57%, 125.23% and 38% respectively. The growth of profit from 2018 to 2019 for the Cooperative Bank of Oromia (CBO) was 281%.

In addition, Tadesse (2019) noted that the total deposit collected by all commercial banks providing interest-free window services at the end of May 2019 was 40 Billion Ethiopian Birr (1.5 billion USD) and CBE has a 66% share from this deposit. Further, Aman (2019) analyzed the performance of IFB windows. His findings indicate an incredible growth of profitability.

Determinants of bank performance are categorized into two main groups: external and internal factors (Rahel & Maru, 2015). In fact a number of studies have examined the determinants of Islamic banks profitability using internal and external factors in different panel and individual countries around the world like Malaysia, Pakistan, Indonesia. Such as, research conducted by Wasiuzzaman & Tarmizi (2010), Haron (2004), Abduh & Idrees (2013), Abu Hanifa (2015), Muhammad & Herni (2016), Asadullah (2017), Rini & Burhany (2020) on determinants of Islamic banking profitability the results were inconsistent towards the effect of liquidity, bank size, GDP and other factors to Islamic banking profitability. Moreover mixed and inconclusive results occurred toward determinants of Islamic banking profitability.

Even though many studies have been conducted internationally, not much study has been done in Ethiopia particularly factors affecting profitability of interest free banking. Under this area only Hadji Jemal (2021), had tried to examine determinants of interest free banking business of Ethiopian commercial banks. The study indicated that liquidity management has positive and significant impact, while bank size, operating efficiency; GDP and Inflation are insignificant impact on the financial performance of Ethiopian banks operating interest free Banking business. But other variables like deposit mobilization and management efficiency was not included in the study. Since 2013 interest free banking is growing from time to time in Ethiopia, but the industry is still at the beginning stage. This raises a need to adequately examine financial performance determinants of interest free banking service in detail to devise mechanism for improvement to remain competitive with sustainable growth playing expected role on the economic development.

Therefore, this study was conducted on determinants of financial performance of interest free banking service of selected commercial banks in Ethiopia, by considering both internal and external factors. Internal factors included: - deposit mobilization, operating efficiency, liquidity, management efficiency and bank size while, external factor include growth domestic product.

1.2 Statement of the problem

Interest free banking is among fastest developing business over the globe and become an important part of the financial system in many countries. Interest free banking continues to grow in size and complexity despite different challenges faced since emergence in the 1970s, (IMF, 2014). Global Islamic finance assets grew at double-digit growth, rising from \$2.8 trillion in 2019 to \$3.374 trillion in 2020, of which Islamic banking asset shared \$2.3 trillion (IFDR, 2021).

Particularly in Arabian Gulf countries deposits in Islamic banks are rising steeply as indicated by Aden (2014), and shows the conventional banks are at risk of losing 30 to 40% of their Muslim customers in the coming decade as a result of the introduction of Sharia'h compliant banking products and services. This indicates that the interest free banking service has a great potential market to serve and prosper.

In the context of Ethiopian financial industry, this potential could not be unique. According to Tsion (2017) IFB in Ethiopia was believed to still have a huge untapped opportunity to be exploited by other financial services providers which would use customer satisfaction as a niche in offering IFB service. Suadiq & Ibrahim (2020) also stated that Islamic finance has a notable opportunity in Ethiopia. In addition, Mohamed (2012) found out that there is a bright prospect and huge opportunity of the interest free banking in Ethiopia.

Although it has untapped opportunity for the IFB services to prosper there are also many challenges that hinder the IFB service to compete with the existing conventional banking system. In general, the challenges of IFB emanates from its unique nature and guiding principles. As a result the Interest free banks operate under dual constraints (Gizachew, 2019) and (Hadji Jemal, 2021). According to Samad (2004), interest free banks are expected to obey not only to the Islamic laws but also to the conventional business laws of the land; it is natural to note that it faces stiff competition with the long existed conventional banks.

As per Ibrahim Dawd (2021) at the end of December 2020 banks in Ethiopia mobilize a total deposit of Birr 76 billion from their IFB window activities and total outstanding financing extended to the economy reached Br. 17.76 billion. Also a total profit (net of income tax) of Br 1.01 billion was generated for the period (Hadji Jemal, 2021).

This indicates it needs further insight to understand and managing determinants of IFB financial performance due to a little attention was given to the area.

On various aspects of Interest free banking business numerous researches have been conducted in developed and emerged market countries. Among the study particularly on determinants of Islamic banking profitability include, according to the research conducted by Abduh & Idrees (2013), Haron (2004) and Abu Hanifa (2015) bank size has positive and significant impact on Islamic banking (IB) profitability. In contrast, the research conducted by Asadullah (2017) shows that bank size has a negative impact on Islamic banking profitability.

The investigation conducted by Wasiuzzaman &Tarmizi (2010); Asadullah (2017); Haron (2004) indicates liquidity has positive and significant effect on Islamic Banking profitability. In contrast, Rini & Burhany(2020) argues that, the impact of liquidity on Islamic banking profitability was negative but significant. On the other hand, Muhammad & Herni (2016) argue that, liquidity has not influence profitability of Islamic banking.

Finally, the research conducted by Wasiuzzaman & Tarmizi (2010), Ghazali (2008) shows that GDP affect profitability Islamic banking positively and significantly. In contrast, Abu Hanifa (2015) concluded that GDP influences Islamic banking profitability negatively.

In general, the inconsistency finding among researchers on the same variables may be due to economic, social and other differences from country to country.

However, in Ethiopia interest free banking is a recent phenomenon as a result limited studies have been conducted on the area. The studies conducted so far include the following, Wondwsen (2018), Meka (2020), Tsion (2017), Akmel (2015), Mohamed (2012), Jemal (2018), Suadiq & Ibrahim (2020) and Kerima (2016) had studied the challenges, opportunities, prospects and practice of interest free banking in Ethiopia. And these studies found out that lack of awareness, regulatory, supervisory and institutional challenges are the most common challenges faced in the interest free banking service. All of those studies are focused about theoretical issue of interest free banking.

But, only few studies made concerning IFB financial performance assessment and determinants in Ethiopia. Such as; Gizachew (2019) concluded that the ROA, IFB ratio, Efficiency, deposit,

financing and bank size of the IFB has shown continuous improvement over the study period. Liquidity ratio had shown a declining trend but still very liquid since the investment of the IFB is very low. But the study assessed the trend of financial performance of state owned bank only and was not used model.

Hadji Jemal (2021) also found out liquidity management has positive and significant impact on the financial performance of Ethiopian banks operating interest free Banking business, while bank size, operating efficiency, GDP and Inflation are insignificant impact. However, the study not considered factors like deposit mobilization and management efficiency. Hence, those factors had not been shown in previous research of commercial banks operating IFB service in Ethiopia.

As indicated above, researchers in various countries focused on factors, such as liquidity, bank size, GDP and they got inconsistent result towards Islamic banking profitability. Prior researches in Ethiopia context mainly focused about theoretical issue of IFB. There was no study conducted on commercial banks operating interest free banking business in Ethiopia about determinants of financial performance except Hadji Jmal (2021). However, the study had not considered factors like deposit mobilization and management efficiency.

In order to fulfill this gap the researcher motivated to conduct a research about determinants of financial performance of interest free banking service of selected commercial banks in Ethiopia, by using factors like deposit mobilization, bank size, management efficiency, liquidity, operating efficiency and GDP, to show their impact deeply by extend the study period. Moreover, from those factors deposit mobilization and management efficiency was included in this study for the first time to investigate their effect on financial performance of interest free banking service of selected commercial banks in Ethiopia. Also, this study has addressed IFB financial performance status of those banks.

1.3 Objective of the study

The main objective of the study is to examine the determinants of financial performance of interest free banking service on selected commercial banks in Ethiopia. Specifically, it tries to achieve the following objectives.

- To examine the status of financial performance of interest free banking (IFB) service in selected commercial banks in Ethiopia.
- To examine the effect of bank specific variables on financial performance of interest free service in selected commercial banks in Ethiopia.
- To analyze the effect of macro-economic variable on financial performance of interest free banking service in selected commercial banks in Ethiopia.

1.4 Research Hypothesis

Deposit mobilization

Deposits of the banks are considered the main source of bank funding and hence, it has an impact on the profitability of the banks (Muda, Shaharuddin, & Embaya, 2013). They said deposit has positive effect for Islamic banks profitability. According to Khan, Ijaz & Aslam (2014) deposit and profitability have significant and negative relationship. In addition according to Rahaman & Akhter (2015) deposit have a significant negative impact on the return on assets (ROA).

Hence, the hypothesis developed for deposit impact towards return on asset is

H1: deposit mobilization has positive and significant effect on financial performance of interest free banking service for selected commercial banks in Ethiopia.

Operating Efficiency

According to Wasiuzzaman & Tarmizi (2010) operational efficiency has positively and significantly influences profitability of Islamic banks. While according to Muhammad & Herni (2016) Kosmidau et.al (2005) and Heffernan and Fu (2008) operational efficiency ratio has a negative relationship with profitability. Besides, Abduh & Idrees (2013) conclude that operating efficiency has insignificant positive effect on profitability.

Thus, the hypothesis developed for operating efficiency toward return on asset is:-

H2: operating efficiency has negative and significant effect on financial performance of interest free banking service for selected commercial banks in Ethiopia.

Liquidity

An excess of liquid asset could decrease profitability, while a shortage of liquid asset would stress the bank to meet its obligation which were due. The higher profitability could be expected if we tied up fewer funds in liquid investments (Abdillah, Hosen, & Muhar, 2016).

According the research made by Hadji Jemal (2021), Supiyadi & Arief (2018), Asadullah (2017), Wasiuzzaman & Tarmizi (2010) and Haron & Azmi (2004), liquidity makes a positive and significant impact on banks profitability. Nur Amirah et al. (2018), Bakkeri & Ali (2020) revealed that there is a significant relationship between liquidity management towards the performance of Islamic Banking. While, Rini & Burhany (2020) argued liquidity has a negative effect on return on asset.

Hence, the hypothesis developed for liquidity towards the financial performance of Islamic / Interest free banking is:-

H3: Liquidity has positive and significant effect on financial performance of interest free banking service for selected commercial banks in Ethiopia.

Management Efficiency

Management efficiency is one of the dominant internal factors in determining the profitability of banks. Thus a sound management is crucial for the success of any institution. A study made by Ongera (2020) on sharia banking and financial performance of selected commercial banks in Kenya, by using return of investment as a proxy of profitability. The finding of the study shows that management efficiency has positive and significant impact on profitability those banks.

If managements able to effectively deploy resources, maximize revenue and reduce operating costs this leads to higher the efficiency levels of the bank and higher its profits.

Thus, the hypothesis is:-

H4: Management efficiency has positive and significant effect on financial performance of interest free banking service for selected commercial banks in Ethiopian.

Bank size

Bank size is one of the variables to determine banks' profitability. The bigger the size of the bank results higher the profitability, the reason is that large size may result in economies of scale that will reduce the cost of gathering and processing information or in economies of scope that result in greater loan product diversification and accessibility to capital markets which are not available to small banks (Abduh & Idrees, 2013).

According to Idris et al. (2011) and Bahsir (2003), they found that the bank size is a very strong variable that will positively influence the level of profitability. Idris et al (2011) believed that the larger the bank would have an advantage in negotiating the price of input, and it can reduce bank's average cost. Therefore, the bank is able to enjoy the economics of scale and improve its profitability. In addition, according to Abduh & Idrees (2013), Abu Hanifa (2015) and Haron (2004) found that bank size has positive significant impact on profitability of Islamic banks. On the other hand a study conducted by Hassan & Ahmed (2019), Rahaman & Akhter (2015) and Asadullah (2017), indicated that bank size has a significant impact on the profitability of Islamic banks, but negative correlation with profitability. However, Hadji Jemal (2021), Wasiuzzaman & Tarmizi (2010) did not find a significant relationship between size and profitability of banks.

Therefore, hypotheses would be formed between bank size and Return on Asset (ROA):

H5: bank size has positive and significant impact on financial performance of interest free banking service for selected commercial banks in Ethiopia.

GDP

Economic growth is associated with higher volumes of banking business in particular to more credit, according to Athanasoglou et al. (2006) in periods of economic depression banks are more exposed to greater levels of default and consequently to lower results. According to Muhammad & Herni (2016), Ghazali (2008), Wasiuzzaman & Tarmizi (2010) GDP growth has a positive and statistically significant impact on Islamic banks financial performance.

While, Masood & Ashraf (2012); Supiyadi & Arief (2018); Abu Hanifa (2015) indicated that GDP influence profitability of Islamic banks negatively.

Therefore, hypotheses would be formed between Gross Domestic Product (GDP) and Return on Asset (ROA) of interest free banking service in Ethiopia as follows:-

H6: GDP has positive and significant impact on financial performance of interest free banking service for selected commercial banks in Ethiopia.

1.5 Significance of the Study

Regulatory bodies and other stakeholders in the context of Ethiopia would be able to benefit by understanding IFB operation, product as well as what factors influence their profitability. The banks management would benefit more by understanding the influence of internal and external factors on profitability of their IFB service to monitor financial performance of IFB and make a sound decision to improve performance and remain competitive in the business. The study would also offer assistance to another analyst who needs to research in the same field and related areas by giving bits of knowledge that must be considered in their investigation.

1.6 Scope of the study

The study was limited to some bank specific and macroeconomic determinants of financial performance of interest free banking service of selected commercial banks in Ethiopia. The study would cover one state owned bank (Commercial bank of Ethiopia) and three private commercial banks include; oromia international bank, united bank and cooperative bank of oromiya, which operate interest free banking service and have separate records. Therefore, this study was included six years balanced data of those four commercial banks operating interest free banking service for the period 2015/16 – 2020/21. However, the study would not address the newly established full-fledged Islamic banks like Hijira and Zamzam bank that start operation recently.

1.7 Limitation of the study

Interest free banking is a new phenomenon not more than ninth years of service experience since launched and has an infancy stage of development in Ethiopia. Due to this fact it was difficult to get well organized recorded data to examine the performance of IFB service commercial banks.

Hence, availability of long ranged and well organized data was the major constraints of the study. Consequently, small sample size was selected only 6 years of four commercial banks that started IFB service early and have IFB performance data. Besides, some determinants eliminated from the study despite it might have impact on the financial performance of IFB service.

In addition, IFB service has been given using the dedicated window of conventional banking and after 2019 also given in branch level. Therefore, resource sharing and cost allocation framework was not established well for dedicated window services of a bank. Hence, fixed assets other common costs including indirect costs on the financial reports of IFB could not be separated and accounted properly. Implies, the data which collected from the financial statement of the bank could have its limitation.

1.8 Organization of the study

The study would contain five chapters. Chapter one focuses on introductory aspects including the background of the study, statement of the problem, objectives, hypothesis, significance, scope, and limitation of the study. Chapter two would present review of the theoretical and empirical literatures of the study. Chapter three would present research design and methodology including research approach, type and source of data, method of data collection, the sampling techniques used, variable definition and measurement and method of data analysis. Chapter four would contain data presentation, analysis, and interpretation. Finally, chapter five would include the conclusion and recommendation.

Chapter two: Literature Review

2.1 Introduction

This section, in light of interest free banking, provides the theoretical review of the study. Besides empirical review of related literature, overview of IFB, measurements and determinants of bank performance and conceptual framework would address for the chapter.

2.2 Theoretical literature review

2.2.1 Definition and Concepts of Interest Free Banking

Interest free (Islamic) banking refers to a system of banking or banking activity that is consistent with the principles of the Shari'ah (Islamic rulings) and its practical application through the development of Islamic economics. The principles which emphasize moral and ethical values in all dealings have wide universal appeal. Shari'ah prohibits the payment or acceptance of interest charges (riba) for the lending and accepting of money, besides carrying out trade and other activities that provide goods or services considered contrary to its principles but it allows profit sharing. While, these principles were used as the cornerstone for a flourishing economy in earlier times, it is only in the late 20th century that a number of Islamic banks were formed to provide an alternative basis to Muslims although Islamic banking is not restricted to Muslims (Edwin M Egboro , 2014).

As stated by Sanusi (2011) Islamic banking is an alternative form of financial intermediation that is based on the profit motive. In addition, it is not the only type of profit and loss sharing banking based on non-interest principles, but it is the most developed form that has international acceptance and appeal. It is market driven but with a moral dimension based on the Islamic value system.

Islamic banking appeared on world forum as a prominent player over two decades ago. But actually many principles of Islamic banking system have been commonly accepted all over the world for centuries rather than decades Islamic financial system is existed in Muslim community in different shapes according to situation of time. Actually Islamic financial system has a capability to fulfill the society requirements in respectable way.

Islamic banking is a growing sector with its diversity in various segments and spectrum. It caters to religious Muslims in Muslim's societies beyond in countries where Muslims are in minority. In addition, it is a broad standard due to non-Muslim individuals and communities that seek ethical financial solutions have also been attracted to Islamic banking. It is clear from banking practice that Islamic banking is equally popular in all communities (Iqbal, 1998).

2.2.2 Principles of Interest Free Banking

Interest free banking principles are not a recent phenomenon, it was known since the advent of Islamic religion, it was in the 7th century AD Islamic financial operations were known and practiced when the Prophet Mohammed (peace be upon him) prohibited some transactions involving Riba (interest), Gharar (deception), Qimr (gambling), Mujazafah (speculation), Ihtikar (monopoly) and other similar transactions. However, some transactions were allowed such as Murabaha (Mark-up sale), Musharakah (partnership), Mudarabah (sleeping partnership), and other similar transactions. Some of these operations were known to many earlier Islamic civilizations, but those transactions were developed and customized further to achieve the required attribute and respond to the modern banking industry requirements (Chachi, 2005). The Islamic financial structure originates from the principles developed within these principles, which are outlined below.

I. Prohibition of Interest

Interest free Banking provides financial services in compliance with the religious injunction of Islam, which mainly prohibits taking and receiving of interest in any of its transactions. Any fixed, positive, predetermined rate tied to the maturity and the amount of principal that is, guaranteed regardless of the performance of the investment is considered interest and is prohibited Iqbal (2014). The distinguishing feature of interest free banking from that of the conventional counterpart is the taking and giving of interest, which is strictly prohibited in all transactions.

II. Profit and loss Sharing

In performing interest free banking financing activity the provider of the capital and the one that uses the fund need to share the risk and the reward of the investment, derived from the principle "no gain without pain". The provider of capital (Customer), the Bank and the borrower should all

share the risks and the rewards of business venture. The profit and loss sharing principle is not the feature of conventional banking system, as the whole pressure is the responsibility of the borrower regardless of the performance of the business venture. The central theme of interest free banking financing arrangement is the financier is only qualified to get income if he is willing to assume risk of business venture. According to Kettell (2011) the main objective of PLS (profit and loss sharing) is to promote investment and thereby provide a stimulus to the economy.

III. Making money out of money is not acceptable

Money has no intrinsic value in itself, hence Interest Free Banking consider Money as a medium of exchange, a means of defining the value of things , and therefore should not be possible to generate more money via fixed interest payment being deposited in bank or lent to someone else. As mentioned in Kettell (2011) Muslim scholars consider money as potential capital that must be injected in real economic activities to consider it as a capital. For the reason stated Interest free banking system invest in business venture assuming the risk of business venture while performing its day to day business activities using the financing modalities designed for the purpose in order to change the potential capital (Money) in to capital.

IV. Shari'ah approved activities.

Islamic banking is a banking system that is based on Shari'ah. Therefore any transactions that are prohibited by Shari'ah such as alcohol, gambling etc. are avoided in Islamic banking. Islamic banks can only participate in transactions or activities that are approved by the Shari'ah advisors.

2.3 Islamic banking Service Models

According to Aman (2019) Interest-Free Banking (Islamic banking) is implemented in various countries using different structures and approaches. The three major models are Full-fledged, Subsidiary and Window model.

2.3.1 Islamic banking window service

According to Solé (2007) an Islamic banking window is simply a window with a conventional bank via which customer can conduct business utilizing only sharia compatible instruments. Sanusi (2011) defines Islamic banking window as a business model in which conventional banks provide Islamic banking products and services from their existing branch network. National

Bank of Ethiopia (NBE) also defines Interest free Banking window in its Directive no. SSB 51/2011 as Unit in conventional Bank that exclusively offers interest free Banking Services.

In addition according to Aman (2019) an Interest free banking window can be defined as a department or a division, unit or even a separate finance company set up by a conventional financial institution that offers sharia-compliant products and services to customers who prefer Shari'ah compliant services over conventional ones

Islamic windows offers the best opportunity to building capabilities at the lowest costs as a starting point while the business is being developed and allows the Bank to build the infrastructure at an acceptable pace to further/larger infrastructure investments if there is a decision to expand the business into a subsidiary (Hadji Jemal, 2021).

2.3.2 Subsidiary/branch Islamic banking service

According to Sole, (2007), Islamic banking subsidiary is a form of interest free banking system where Islamic banking products and services offered by subsidiaries of the existing conventional banks, but the two are clearly separated in terms of their operation and management.

In other word Islamic banking subsidiary is a partially-independent office of a bank engaging in banking activities such as accepting deposits or making loans at facilities away from a bank's home office. This branch banking established when the main bank feels there is a potential of concentrated customers are found in the area want to serve these customer.

2.3.3 Full-fledged Islamic banking service

These are independently established banks that generally are not under any conventional banking influence. Theoretically, such forms of Islamic banks have the capacity to offer new-to-market products, based on the approvals obtained from Shariah committees. Such banking forms are common in Middle East where standalone Islamic banks are established. According to Aman(2019) in some countries, such as Sudan, Iran, and some Gulf countries, a full-fledged bank is more promoted and dominates the market. The study also noted that this type of bank is a sharia compliant bank that operates based on an independent management system, specifically raised capital, specially designed products and uses different risk management, accounting, and

auditing procedures. Since it is relatively strict in following the Sharia principles, this bank is more dominant in Muslim majority countries.

2.4 Interest Free Banking Products

The introduction of Interest Free Banking system paved a way for inclusion of portion of the societies that were ignored to get a banking services in line with their religious teachings, following the commencement of Interest Free Banking, various types of deposit and financing products are introduced complying the Islamic rule (Sharia).

2.4.1 Deposit Products

As mentioned by Kettell (2011) Islamic banks depend on four main sources in the mobilization of funds that include shareholders' funds, current accounts, investment accounts and savings accounts. The bank and the investment deposit holders partakes the realized profit in accordance with the ratio agreed upon between the parties at the time of contracting. In the current account the deposit is treated as if they are loans from the clients to the bank and therefore, bear no yield to the account holders. However, being loans to the bank, their principal is secured by the bank. According to Kettell (2011) the source of deposit mobilization of IFB products are shown as follows.

A. Unrestricted Investment Deposits (Unrestricted Mudaraba)

This type of IFB deposit is an earning deposit which is mobilized with the knowledge that bank acts as the Mudarib (manager) and invests the fund without restriction and intervention of the capital provider in any Shariah compliant manner. The profit on the investment can share as per agreement and loss will be shared by the depositor (capital provider). The bank has discretion to participate in the investment, and can pool the money for its daily IFB business activities.

B. Restricted Investment Deposit (Restricted Mudaraba)

Such kind of IFB deposit is an earning deposit that is mobilized with the information that bank acts as because the Mudarib (manager) and invests the fund in restricted investment supported active intervention of the capital supplier complemented with skilled recommendation from the bank aspect. The profit on the investment is shared as per agreement and loss is shared by the depositor (capital provider).

C. Wadiah (Safekeeping) Deposit

This is a peculiar non-earning type of IFB deposit that operates under the contract of Wadiah Yad Dhamanah (guaranteed custody). The bank accepts deposits from its clients looking for safe custody and convenience and requests permission to make use of the customer funds for investment functions promoting transparency. The customers might withdraw their balances at any time. Profit generated from the use of the customers' funds or deposits belongs to the bank. Nevertheless, the bank may at its absolute discretion reward the customers by declaring profits to them. Under the contract of Wadiah, the custodian i.e. the Bank is not allowed to promise or to mention any reward on the deposit received, and the owner/depositors too cannot demand any rewards or return from their Bank on their savings (Kettell, 2011).

2.4.2 Financing Products

I. Mudaraba (Silent Partnership)

Mudaraba is a contract between two or more parties whereby one party, the financier entrusts funds to another party, the entrepreneur to undertake an activity or venture. So, it is a partnership in profit between capital and work. The management of the venture left only to the entrepreneur and the Bank (Financier) will not have a say on the management of the business. The yield is not guaranteed in profit sharing and financial losses are borne entirely by the provider of the capital (Financier), the partner that provides its expertise only loses the time and effort contributed or invested in the enterprise.

II. Musharaka

It is a form of partnership between an Interest Free Bank and its client where by each party contributes to the partnership capital, in equal or varying proportion, to establish a new project or share an existing one where by each of the parties become owner of Capital on a permanent or declining basis and is owed its due share of profits. Losses if any are shared in proportion to the capital contributed (Kettell, 2011).

III. Murabaha

The Murabaha contract refers to the sale of goods with a pre-agreed profit mark-up on the cost. Interest Free Bank purchase the goods ordered by a customer from a third party and then sells

these goods to the same customer by adding profit rate on the purchase cost of the item. The Interest Free Bank purchases the goods only after a customer has made a promise to purchase them from the (Kettell, 2011).

IV. Istisna

Istisna refers to a contract to sell to a purchaser a non- existent asset that is to be constructed, built or manufactured according to the agreed specifications and delivered on a specified future date at a predetermined price (Kettell, 2011).

V. Ijara

Ijara is the transfer of ownership of a service for an agreed upon consideration (rent). Ijara relates to the usage (usufruct) of assets and properties, Ijara in this sense means to transfer the usufruct of a particular property to another person in exchange for a rent claimed from him. The term Ijara is analogous to the English term “leasing” as indicated by (Kettell, 2011). According to Sanusi (2011) an ijarah is an Islamic lease. In connection to this, the bank purchases an asset and leases it to a client or customer for fixed monthly payments. An ijarah may include an option for the lessee to buy the asset at the end of the lease, which is a way for Islamic banks to provide finance for ownership of goods and services (Sanusi, 2011).

VI. Salam

According to Kettell (2011) salam is a sale whereby the seller undertakes to supply some specific goods to the buyer at a future date, in exchange for an advanced price fully paid at spot. Also it is a contract involving the purchase of a commodity for deferred delivery of goods in exchange for immediate payment according to specified conditions

2.5 Islamic (interest free banking) VS conventional banking

Islamic banking is operating in the same society where conventional banks are operating and perform all those functions which are expected from a financial institution. However, the philosophy and operations are different (Khan & Bhatti 2008). The use of money is one of the main differences between Islamic and conventional banks. In conventional banks, money is used as a commodity that is bought and sold through the interest’s usage (Pasha, 2014).

Table 2.1 Difference between conventional and Islamic banking

Islamic banks	Conventional banks
Functions and operating modes are based on Sharia	Functions and operating modes are based on secular principles
Financing is not interest (Riba) oriented and should be based on risk-and reward sharing.	Financing is interest oriented, and a fixed or variable interest rate is charged for the use of money
Aims to maximize profit subject to Shari'ah restrictions	Un restricted profit maximization
Participation in partnership business is the fundamental function of the Islamic banks	Leading money and getting it back with interest is the fundamental function of the conventional banks.
The projects profitability is the main determinant of financing	Loan given to whoever has guarantor/collateral is the main determinant
In the modern Islamic banking system, it has become one of the service-oriented functions of the Islamic banks to collect and distribute Zakat.	It does not deal with Zakat
It grant greater emphasis to the viability and the benefit of the financed projects	It grant greater emphasis on the credit worthiness of the customers
depositors are guaranteed return on average assessment of their funds based on the principle of al Wadiah), however, based on Mudarabah concept, depositors have to share in loss position	A conventional bank has to guarantee all its depositors
The Islamic banks have no provision to charge any extra money from the defaulters	It can charge additional money (compound rate of interest) in case of defaulters.
Decisions based on the interest of the society	Decisions based on the interest of the shareholders
Both the bank and the customer have a stake on the financial activities and investments based on the Islamic law	Customers have no opportunity to choose where their money is invested
The status of Islamic bank in relation to its clients is that of partners, investors and trader.	The status of a conventional bank, in relation to its clients, is that of creditor and debtors

Source: from (Mohammed, 2018), (Kerima, 2016), (Gizachew, 2019), (Hadji Jemal, 2021)

And https://www.islamibankbd.com/abtIBBL/cis_islamic_banking_some_conceptual_issues.php

2.6 Deposit Mobilization and Profitability of IFB Windows in Ethiopia

According to each bank website currently as June 2022 from a total of above 18 state owned and private banks in Ethiopia, 12 banks has accepted the license to provide interest-free banking window services. Besides two full-fledged Islamic banks like Zamzam and Hijira Banks has been started operation recently.

According to Suadiq & Ibrahim (2020) deposits are collected mostly by three types of accounts such as Amanah (current account), Wadi'a (saving account) and Mudarabah (profit sharing account). They also showed state-owned Commercial bank of Ethiopia (CBE) that dominated the banking sector in Ethiopia also dominated the interest free banking window services.

Tadesse (2019) denoted that the total deposit collected by all commercial banks providing interest-free window services at the end of May 2019 was 40 Billion Ethiopian Birr and CBE has a 66% share from this deposit. Oromia International Bank, Cooperative Bank of Oromia (CBO), (OIB) and Awash Bank (AB) also has a substantial share from the total deposit collected throughout the country. In addition as per Ibrahim Dawd (2021) at the end of December 2020 banks in Ethiopia mobilize a total deposit of Birr 76 billion from their IFB window activities and total outstanding financing extended to the economy reached Br. 17.76 billion. Also a total profit (net of income tax) of Br 1.01 billion was generated for the period (Hadji Jemal, 2021).

2.7 Determinants of Bank Performance

Bank performance determinants are categorized into two main groups: external and internal factors. The internal determinants are the direct result of managerial decisions, so such management effects would definitely affect the operating result of banks. External determinants, on the other hands, are variables that reflect economic and legal environment which are out of the control of the management of the banks (Rahel & Maru, 2015). "In other words, these factors are commonly used that bank performance is a function of internal and external factors. Internal factors generally refer to the individual bank specific characteristics which influences how the bank performs. These factors are mostly managed and influenced by the bank management and policy decisions that can vary from bank to bank. These internal factors mostly employed are capital adequacy, asset quality, expenses, bank size, management quality, liquidity management, loan portfolio, and income diversification".

On the other hand, External determinants of bank performance are concerned with those factors which are not influenced by specific bank's management decisions and policies, rather by events outside the influence of bank. These external factors are industry wide or country wide factors that are outside the control of the management of the bank like market concentration, inflation, tax rate and GDP. Other external variable includes premium rate, business sector structure, gross domestic product, regulation, inflation, and business sector development.

2. 8 Measurement of Bank performance

The efficiency of the banking system has been one of the hot issues in financial environment. Since their products and services are of an intangible nature, it is hard to measure their efficiency and competitiveness of financial institutions as indicated by (Talam, 2014) and many researchers have attempted to measure the productivity and efficiency of the banking industry using outputs, costs, efficiency and performance. Bank's performance able to gives signal to depositor and investors whether to invest or to withdraw funds from the bank and whether to buy or sell the bank's securities. Besides, regulators also need to know the bank's performance for regulation purposes. On the other hand, the bank's manager needs to know how well the bank has performed towards its objective or goal by looking at the bank's performance (Talam, 2014).

According to Hassan & Bashir (2005) evaluating bank performance is a complex process that involves assessing interaction between the environment, internal operations and external activities. Demez, Ustaoglu, & İncekara (2018), had also mentioned that due to the complexity of the process and the need for considering a wide range of elements and variables, performance measurement is not an easy task particularly in the banking sector.

Regulators mostly used a popular measurement called CAMEL framework to evaluate financial health and performance of financial institutions and uses financial ratios. CAMEL framework uses five factors such as Capital Adequacy, Asset Quality, Management Quality, Earnings and Liquidity. Regarding the measurement of the Interest free banks, the failure of the bank could not only due to inadequacy of the above mentioned CAMEL factors but also as a result of the non-compliance of the Shari'ah principles according to (Al-jarh & Iqbali, 2001).

The uses of financial ratios, calculated through the bank's accounting statements, are existed and common in the many literatures. For instance (Talam, 2014), (Elgadi, 2016) and (Mabonga,

2016) had used three major categories of financial ratio (profitability, liquidity and credit risk management) to measure the performance of the interest free banking.

Hassan; 2005, Kablan&Yousfi; 2011, (Akhter, Raza, Orangzab and Akram; 2011, Salami and Adeyemi; 2015, (Alghfais; 2017), Awan; 2009), Khan; 2013), Khan, Ahmad, Rahman and Haleem; 2018) has mentioned various financial ratios as a measure of financial performance of companies. These ratios can be grouped under five broad categories namely Profitability, Liquidity, Risk and Solvency, Capital Adequacy and Operational Efficiency cited by (Gizachew, 2019).

Profitability Ratio: it is one of the most frequently used tools of financial ratio analysis that measures the managerial efficiency that shows banks overall efficiency and performance. It can be measured using:

Return on Assets (ROA): measures the amount of profit earned relative to the firm's level of investment in total assets i.e. $ROA = \text{Net Profit} / \text{Total Assets}$.

Return on Equity (ROE) = net profits/equity. It indicates a rate return on base capital, i.e., equity capital. The ROE is higher; the more efficient is the performance.

Cost to income Ratio (COSR) = total cost/total income. It means cost incurred per birr generation of income or in other words, income generated per birr cost which is considered to be one of the best indicator for measuring economic efficiency or profit performance. The lower the cost to income ratio, the better is the profitability performance of a bank.

Liquidity Ratio: it is used to determine the ability and capacity of a financial institution to meet its short-term debt obligations. Liquidity ratios attempt to measure a company's ability to return on average asset off its short-term debt obligations. The higher liquidity ratios imply, bank has larger margin of safety and ability to cover its short-term obligations. In addition, according to Samad (2004) liquidity is the life of a commercial bank. So, the higher the amount of liquid asset for a bank, the greater is the liquidity of the bank. Hence, commercial banks must hold sufficient liquidity. Liquidity ratio can be measured by loans to deposit ratio (LDR), total loans to total asset ratio (TLTA) and liquid assets to total deposit ratio (LATD). Moin (2013) mentioned that bank with low liquidity ratio is considered to have excessive liquidity, potentially lower profits,

and therefore less risk as compared to the bank with high liquidity ratio. However, high liquidity ratio shows that a bank has taken more financial stress by making excessive loans and also shows risk that to meet depositors' claims bank may have to sell some loans at loss.

Capital Adequacy Ratio: Bank's capital amount expressed as percentage of its risk weighted credit exposures is measured by this ratio. It denotes the healthiness of financial institution to shock withstanding losses. It can be calculated as: $\text{Capital Adequacy Ratio (CAR)} = \text{Capital} / \text{Risk-weighted Asset}$.

Risk and Solvency Ratio: The solvency ratio indicates whether a company's cash flow insufficient to meet its short-term and long-term liabilities. A bank is solvent when the total value of its asset is greater than its liability.

Operational Efficiency Ratio: it is used to analyze how efficiently and effectively a company is using its resources to generate sales and increase shareholder value (Moin, 2013). It measures managerial efficiency in generating operating revenues or income and controlling its operating expenses. There are several ways of measuring operational efficiency of a bank. According to Muhammad & Herni (2016), Wasiuzzaman & Tarmizi (2010) the ratio of cost to income or $\text{Total Operating Expenses} / \text{Total Operating Revenue}$ is used to evaluate the operational efficiency of banks. Lower operating efficiency is preferred than higher, because lower operating efficiency shows that operating expenses are lower than operating revenues.

2.9 Empirical Review

This section gives a brief review of the previous studies made on the determinants of Islamic banks profitability or financial performance from both developed and developing nations. Thus, empirical works done on the determinants of Islamic bank performance have focused on either a panel countries or on an individual country. Moreover, most of the studies undertaken on Islamic banks profitability consider both internal and external factors to examine performance of banks.

Despite having undergone considerable developments during the last two decades, empirical evidence on the performance of the Islamic banking sector is still in its infancy, especially compared with the conventional banking (El-Gamal&Inanoglu 2005). So, the determinants of

Islamic bank performance studies conducted in panel country, a single country, and studies made in Ethiopia related to Interest free banking are reviewed as follows.

2. 9.1 Panel Countries Empirical review

A research conducted by Haron (2004) about the effects of different factors that contribute towards the profitability of Islamic banks with a sample of 14 banks. He found that internal factors like total expenditures, funds invested in Islamic securities, liquidity and profit-sharing ratio percentage between the bank and the borrower of funds are highly correlated with the level of total income obtained by the Islamic Banks. Interest rates, market share and bank size also exhibited similar effects as external factors. According to the finding, factors that play a significant role in influencing profitability of Islamic banks include: total capital and reserves funds deposited into current accounts, Profit-sharing percentage between bank and depositors and money.

The research made by Smaoui & Salah (2012) about how bank-specific characteristics and the overall macroeconomic environment that affect the profitability of Islamic banks in the Gulf Cooperation Council (GCC). By utilizing a large panel data of 44 Islamic Banks over the period 1995-2009, they found that higher capital, better asset quality, and larger size lead to higher profitability, while higher cost income ratio leads to lower profitability. They also reported that good macroeconomic conditions have a positive impact on the profitability of Islamic Banks.

the study made by Ghazali (2008) about the bank-specific and macroeconomic determinants of Islamic Banks profitability ,by using 18 countries and 60 Islamic banks data from 2002 to 2007 across the world which provided international evidence. The study was used regression analysis to relate different explanatory variables with bank profitability ratios. Profitability of Islamic Banks profitability was measured by return on assets (ROA), return on equity (ROE) and net noninterest margin (NIM) proxies. The study was used seven variables are drawn from the conventional banking literature as proxies for bank-specific and macroeconomic factors.

Result of the finding indicated that capital strength and efficiency factors as, main determinants of profitability; existence of significant positive relationship between profitability measures of Islamic Banks and macroeconomic variables, such as GDP growth and inflation. The findings also revealed that the determinants of Islamic banks profitability are similar to those of the

Conventional banks, indicating the potential suitability of many of the tools and techniques adopted in conventional banking apply also in Islamic banks.

An investigation made by Hassan & Bashir (2005) on how bank characteristics and the overall financial environment affect the performance of Islamic banks by utilizing worldwide bank-level data during 1994-2001. The study used a variety of internal and external banking characteristics to predict profitability and efficiency. The study found that high capital and loan-to-asset ratios lead to higher profitability. Everything remaining equal, the regression results show that implicit and explicit taxes affect the bank performance measures negatively whereas macroeconomic conditions impact performance measures positively. Surprisingly, the results indicate a strong positive correlation between profitability and overhead.

A research conducted by Bakkeri & Ali (2020) about the impact of internal and external factors on the profitability of 30 Islamic banks operating in the Middle East and North Africa over a period from 2005 till 2018. Used Ordinary least square method according to Panel data and profitability was measured by return on asset (ROA). The study indicated that quality of management, liquidity, and capitalization, quality of services, the presence of women and the competence of staff are significant determinants of profitability. However, other determinants including bank size, diversification and inflation have no significant impact on the Islamic banks profitability.

Masood & Ashraf (2012) investigated the bank-specific and macroeconomic profitability determinants of IBs in 12 different countries during 2006-2010, by using a balanced panel data regression model. They found that that assets size has a positive and significant impact on the profitability of Islamic Banks. The positive impact shows that banks of larger assets obtain the higher profitability. The capital adequacy, loans to assets and asset management results leads to a positive and significant relationship with return on assets (ROA) and return on equity (ROE) which plays a vital role in the profitability of banks. The IBs loan losses provision is lower than CBs. The non-performing loans impact negatively banks profitability because of credit volume and assets quality effect banks financial matters. The gearing ratio shows a positive impact on return on assets and negative relationship with profitability measure of return on equity.

These indicate that the gearing ratio leads to more return on assets and inversely affect the return on equity. The financial risks relationship with the return on assets positively and significantly leads the higher profitability of banks while, for equity side financial risk impact negatively. The Islamic banks are assumed to take more risk than of Conventional banks. For achievement of higher profitability, IBs use deposits as leverage type and shared risk with depositors. The real GDP contribute negatively to banks profitability from assets side and impact positively on return on equity. For banks profitably, inflations influencing is not significant. Liquidity, deposits and operating efficiency shows not important or less effect on the profitability of banks.

2.9. 2 Individual countries Empirical review

The study made by Wasiuzzaman & Tarmizi (2010) focused on the financial performance of 16 Islamic Malaysian banks over the period 2005-2008. The profitability ratio is represented by the return on average assets (ROAA), and ordinary least square was used to find the determinants of ROAA. The empirical results in this study show that the positive determinants were found to be liquidity, operational efficiency, GDP and inflation, while asset quality and capitalization affected the banking earnings inversely.

The study conducted by Muhammad & Herni (2016), about the factors affecting profitability level of Sharia banking in Indonesia during the periods 2011-2014, return on Asset (ROA) as a proxy of Islamic banks profitability. Time series data from Indonesian Banking Statistics 2011-2014 were used as the primary data and multiple linear regressions was applied as method of analysis. The result of the study shows that Capital Adequacy Ratio (CAR) Non Performing Financing (NPF), Financing to Deposit Ratio (FDR) and Net Operating Margin did not affect profitability, while Third Party Funds (TPF), Operation Cost Operating Income (OCOI) had negative effect on profitability. Meanwhile the study also showed GDP and inflation variable had significant impact with positive direction.

The study made by Asadullah (2017) on profitability determinants of Islamic banks in Pakistan for period ranging from 2006-2015 using return on asset as proxy of profit and GDP, Size, Inflation & Liquidity as independent variables, shows that size has negative whereas liquidity has positive impact on Islamic banks profitability. The effect of Inflation (INF) and Gross

Domestic Product (GDP) found insignificant on profitability of the Islamic banks of Pakistan during the study period.

Rini & Burhany (2020) examined the determinants of Islamic Banks' profitability in Indonesia for the period 2013-2017. ROA as a proxy of profit and consisted of internal and external factors. The Ordinary Least Squares (OLS) method was used to estimate the panel data model. The study found that internal factors Capital adequacy ratio and net performing financing have positive effect on ROA, while operating expense per operating income and financing to deposit ratio (liquidity) have negative effect on ROA. Meanwhile, external factors interest rate (BI) Rate and Inflation have no effect on ROA.

Nur Amirah et al. (2018) investigated the determinants of the financial performance of 12 Islamic banking in Malaysia for six years which were from the year 2010 until 2016. Financial performance measured based on return on asset (ROA), while the independent variables examined were capital adequacy (CA), asset quality (AQ), and liquidity management (LM). The findings of the study revealed that there is a significant association between asset quality and liquidity management regarding the performance of Islamic banking in Malaysia. Though, there is insignificant relationship between capital adequacies regarding the performance of Islamic Banking in Malaysia.

Simai (2013) was examined the determinants of the profitability of Islamic banks in Zanzibar and Profitability measured by return on assets (ROA) from year 2008 to 2012. The study was used ordinary Least Square (OLS) and Generalized Least Square (GLS) regression model. The study was considered both internal and external variables. The internal variables were include capital, bank size, liquidity, and asset quality and expenses management while, external variables were GDP, inflation, money supply and competition. The result of a study showed that expenses management, money supply and competition were significant in determining the Islamic banks profitability. Also the study indicated that capital, bank size and Inflation have negative but insignificant impact with return on asset. In addition, liquidity was positive but insignificant effect with return on asset.

Abu Hanifa (2015) investigated the effect of bank specific and macroeconomic determinants on profitability of seven Islamic banks in Bangladesh during 2003 to 2013. The study used pool

regression model and system GMM in the investigation process. The study considered ROAA, ROAE and NIM while ROAA is found more preferred profitability indicator for the Islamic banks in Bangladesh. The study revealed that a robust negative effect of credit risk, loan ratio, cost efficiency and capitalization on profitability while bank size has robust positive effect on profitability of the Islamic banks in Bangladesh. In analyzing macroeconomic determinants, the result showed that GDP growth and stock market turnover effect profitability negatively while inflation and real interest rate influence profitability positively. But, the effect of macroeconomic factor on profitability found unexpectedly insignificant.

Abduh & Idrees (2013) investigated the impact of bank specific as well as industry specific and macroeconomic indicators upon Islamic banks profitability. The study used return on average assets as a proxy of profitability, in Malaysia over the period 2006-2010. The internal factors include; size, capital, liquidity, credit risk, financial risk and operation efficiency. The external factor consists of GDP and inflation. The study used a pooled regression analysis for 10 Islamic banks. The results showed that the bank size is a vital importance (significant) in affecting bank profitability. The study also revealed that capital, liquidity and financial risk have insignificant negative impact on banks profitability meanwhile operation efficiency has insignificant positive effect on profitability. Also, financial market development and market concentration have significant positive impact on profitability. Finally, the study showed that a macroeconomic variable inflation has a significant positive impact on Islamic banks profitability.

Supiyadi & Arief (2018) examined about the internal and external determinants of sharia banks profitability in Indonesia over the period 2010 – 2017. The study was used return on assets to measure bank profitability as a function of bank-internal and external determinants. By using balanced data set and fixed effect model, the empirical results have found strong evidence that both internal and external factors have a strong influence on the profitability. The internal factors of the bank i.e. capital adequacy, credit risk, and asset size have a significant and negative effect on bank profitability while liquidity have a positive and significant impact on banks profitability. However, the external factors only inflation has a significant and positive effect, while GDP has a negative and significant effect on banks profitability. This result indicated that banks can enhance their profitability through increasing banks liquidity, substantiate their capital structure,

decrease their assets sizes and credit risk, in addition banks should be hope the external factors, thus sharia banks will be highly competitive than conventional banks

Hassan & Ahmed (2019) examined the impact of bank specific characteristics in determining the Islamic banking profitability in Bangladesh, from the period 2010–2017. The study used return on assets (ROA) as the proxy of profitability and applied a panel analysis Research method as well as fixed effects model. Company specific explanatory variables for the stud were bank size, capital-to-risk assets, liquidity, non-performing investment and cost-to-income. The study found out, capital-to-risk assets and cost-to-income is statistically significant and negatively correlated to profitability. In addition, liquidity appeared slightly insignificant but showed positive relationship with bank profitability. On the other hand, estimation shows a negative correlation between bank size and profitability. Moreover, non-performing investment is found to be positively correlated to ROA. Therefore four variables are statically significant except liquidity.

Rahaman & Akhter (2015) investigated the bank specific factors influencing profitability of Islamic banks (IBs) in Bangladesh during 2009-2013 using linear multiple regression analysis. The study indicated that bank-size and deposit have a significant negative impact on the return on assets (ROA), which is the proxy for Islamic Banks profitability, while equity is found to have a significant positive impact. However, the study found that loan and expense management has insignificant in affecting the profitability of the banks.

2.9. 3 Literature review in the context of Ethiopia

Interest Free Banking is an alternative approach for those portion of the society who were unbanked for the reason that their religious teachings prohibit the activities of conventional banking system. Nowadays, the service of offering Interest free banking system increased around the world for the fact that the strong desire to offer services to growing Muslim population and the desire to hold the increasing demand of international investors attracted to Shariah compliant products. In Ethiopia Interest free banking service started in 2013 and it is a new phenomenon to the banking industry and to the researchers in particular. Due to this fact, the empirical studies conducted in the area are very limited. The studies conducted so far includes the following:

The study made by Wondwsen (2018) on “operational challenges and opportunities of Interest free banking in Ethiopia”. The study showed that lack of proper legal and regulatory framework,

lack of sharia experts, limited market, misunderstanding and lack of standardization of interest free banking concept are the major setbacks and challenges of IFB operation in Ethiopia. In addition the study also depicted that interest free banking is an effective mechanism to subjugate the liquidity and inflation problem.

Mohamed (2012) conducted research on “Prospects, Opportunities and Challenges of Islamic Banking in Ethiopia” before the practical implementation of the IFB service in Ethiopia, and identified potential challenges of the service like lack of awareness, regulatory and institutional challenges, lack of support, gap in research and development in Islamic studies, lack of qualified human resource as well as wrongful association of the service with specific religion.

Kerima (2016) conducted a research on “Challenges on Interest Free Banking Services” and similarly Tsion (2017) made a research about “Challenges and opportunities of interest free banking in Ethiopia” respectively. Their finding had shown various operational and institutional challenges that could be solved by different stakeholders, such as lack of Shariah advisor, lack of supportive regulatory directives, lack of awareness, institutional challenge and inadequate marketing and promotion. On the other side, the study indicated by Tsion (2017) IFB in Ethiopia was believed to still have a huge untapped opportunity.

Another study conducted by Akmel (2015) about “challenges and prospects of Islamic banking for resource mobilization in Ethiopian commercial banks”. The result of the study concluded that Islamic banking service will bring additional capacity in the economy in connection with additional resource for banks, investment opportunity, reaching unbanked customers and employment opportunities in the country through effective mobilization and allocation of capital.

The study made by Jemal (2018) on “practices and challenges of interest free banking windows of commercial banks in Ethiopia”. The findings of the study showed that Interest free banking services have been benefiting banks, not only in terms of increasing customers and mobilizing deposits, but also they enjoyed greater profitability and foreign currency generation. In addition the study indicated lack of supervision, lack of confidence and trust of clients, lack of legal support, lack of qualified human resource, lack of cooperation among Islamic windows, lack of infrastructure suitable for Interest free banking operation are major challenges in the process of offering interest free banking services in Ethiopia

The result of study by Suadiq & Ibrahim (2020) on Interest free banking in Ethiopia: prospects and challenges indicated that Islamic finance has a notable opportunity in Ethiopia. The result of the study also showed unbanked huge customers, lofty demand, the profitability of IFB windows indicate the prospects. While, the study revealed that negative perception toward Islamic finance, legal framework challenges like the exclusiveness of banking business activity, limitation on investment of banks, tax system and unavailability of controlling mechanism.

The study made by Meka (2020) about “challenges and opportunities of expansion of Islamic banks in Ethiopia”. The main findings of the study were an Islamic bank has both opportunities and challenges in their expansion. Higher computation from conventional banks that open interest free banking service in branch and window level, lack of awareness, professional skill gap are the main challenges where as high demand in the market, the banking industry in Ethiopia is in growth stage and Islamic banks can mobilize more addition deposits from Muslim society which was out banking industry are main opportunity of Islamic banking expansions.

The reserch conducted by Teferi (2015) on “contribution of IFB to economic development and its prospect in Ethiopia” and the result of the study concluded that IFB is deemed to play an integral role in Ethiopia in catalyzing the economic development subject to a number efforts required by different stakeholders. The study had also depicts IFB can potentially serve as an alternative banking channel in filling the gap left unaddressed by conventional banking.

The study made by Gizachew (2019) about “performance assessment of interest free banking of the Commercial bank of Ethiopia”. The study concluded that the ROA, IFB ratio, Efficiency, deposit, financing and bank size of the IFB has shown continuous improvement over the study period. Although liquidity ratio had shown a declining trend but still very liquid since the investment of the IFB is very low and majority of the deposits are safe keeping.

Finally Hadji Jemal (2021) examined the determinants of financial performance of interest free banking business by commercial Banks in Ethiopia considering three internal (bank size, liquidity management and operating efficiency) and two external (Inflation and GDP) factors. Return on average asset as a proxy of profit would be used to measure financial performance. The study found out liquidity management has positive and significant impact on the financial

performance of Ethiopian Banks operating Interest free Banking business, while the rest variables have insignificant impact on financial performance of these banks.

2.10 Summary and literatures Gap

Depend on the above literature review a number of studies have examined the determinants of Islamic banks profitability using internal and external factors in different countries around the world. For instance Haron (2004), Wasiuzzaman & Tarmizi (2010), Abduh & Idrees (2013), Ghazali (2008), Abu Hanifa (2015), Muhammad & Herni (2016), Asadullah (2017) and Hassan & Ahmed (2019) have investigated the determinants of Islamic banking profitability in different panel and individual countries. Their results were inconsistent towards the effect of liquidity, bank size, GDP and other factors to Islamic banking profitability. Hence empirical studies suggest that profitability determinants of Islamic banks vary across countries and regions with different results. Moreover mixed and inconclusive results occurred which implies a continuous debate towards the elements of affecting the Islamic banking profitability. However, there exist some common elements that permit a further categorization of the determinants.

When we come to Ethiopia interest free banking is a recent phenomenon since from 2013 it has been expanding their operation alongside with conventional banks either a window or subsidiary level and after 2020 a few full-fledged Islamic banks has started in to operation. Hence, in interest free banking is an infancy stage in Ethiopia. Due to this reason the above literature review highlighted a few studies conducted on the area. However, the study mainly focused on challenges, opportunities, prospects, expansion and practice of interest free banking in Ethiopia, besides their results almost similar. This means prior researches in Ethiopia focused on theoretical nature of interest free banking.

Therefore, the above studies had not tried to investigate the assessment and determinants of financial performance of interest free banking in Ethiopia except Gizachew (2019) and Hadji Jemal (2021). But the first study assessed the trend of financial performance of state owned bank only and was not used model and the second one fail to include important variables, like deposit mobilization and management efficiency argued to be important in determining the performance of interest free banking or Islamic banking. This implies a little attention was given to the area.

In general, both external and internal factors are determinant of Islamic banking financial performance; there is inconsistency of finding and inconclusive result among literature in various countries. This inconsistency of finding among researchers may be due to differences from country to country in macroeconomic, social, and other factors. Prior researches in Ethiopia context mainly focused on theoretical issue of IFB. Only one study made on both state owned and private commercial banks operating interest free banking service in Ethiopia regarding determinants of financial performance. However, the study was not included factors like deposit mobilization and management efficiency.

In order to fill this literature gap the researcher motivated to conduct research on determinates of financial performance of interest free banking service of selected commercial banks in Ethiopia by adding new additional variables and by increasing the study period.

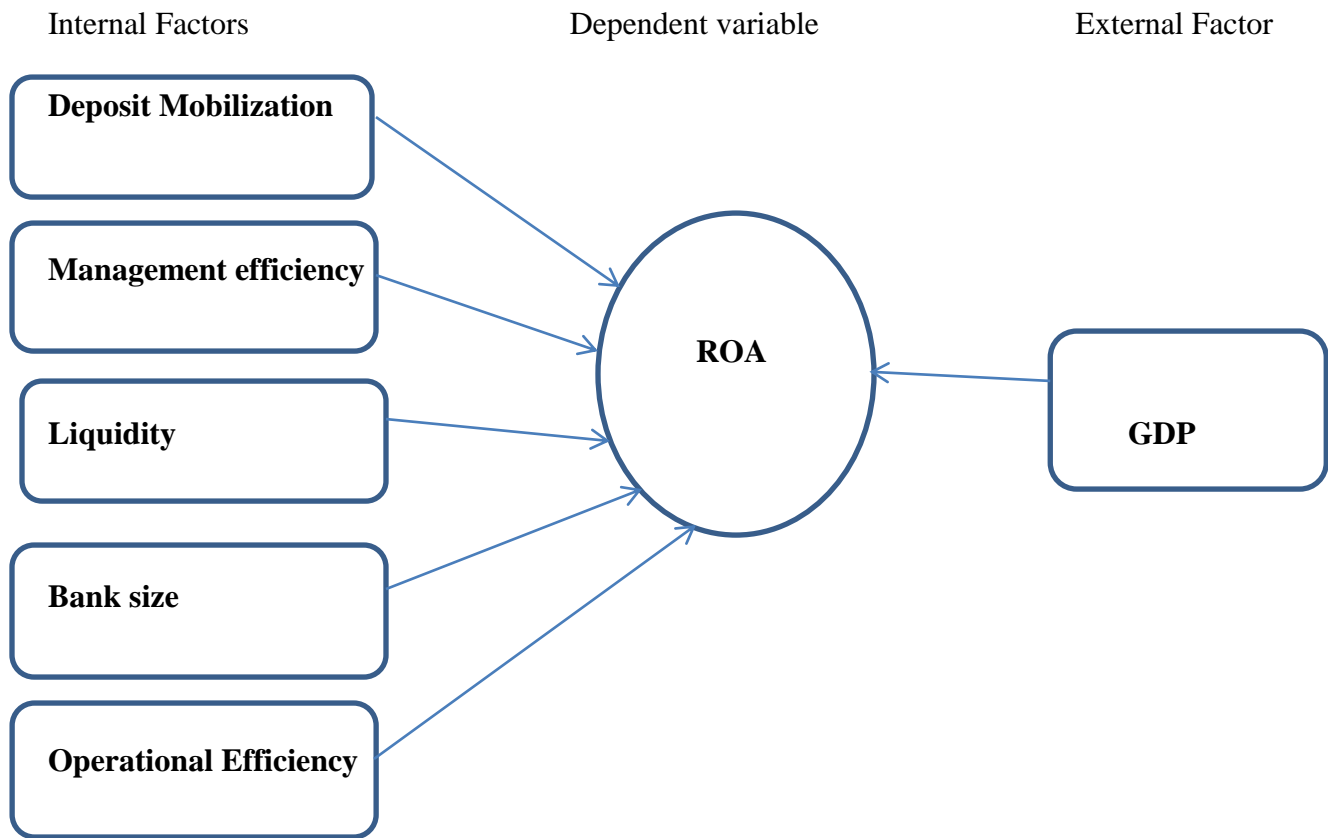
2.11 Conceptual framework

Conceptual framework is a diagrammatic presentation of the relationship between dependent and independent variables.

In this study Return on asset as considered as dependent variable and the study would have six independent factors determining the financial performance of interest free banking service of selected commercial banks in Ethiopia. The above different empirical evidences suggested that the financial performances of interest free banks are determined by internal and external factors.

The internal factors deposit mobilization, management efficiency, Bank size, liquidity, and operational efficiency while GDP included as external factor under this study. The Conceptual framework of these variables is a guide to the research and shows how they determine financial performance of interest free banking service of selected commercial banks in Ethiopia. This conceptual frame work can be elaborate using the following diagram.

Figure 2.1. Conceptual framework



Source: compiled by author from empirical review

CHAPTER THREE: RESEARCH DESIGN METHEDOLOGY

This chapter includes the research design that would be adopted to examine the determinants of financial performance, the research approach, type and sources of data used, data collection technique, the methods employed to analyze the data, variable definition and measurement and the model specifications.

3.1 Research Paradigm

According to Creswell (2009) there are four different worldwide view or knowledge claims. Those are positivism, constructivism, advocacy/participatory, and pragmatism.

Constructivists hold assumptions that individuals seek understanding of the world in which they live and work. An advocacy/participatory worldview hold that research inquiry needs to be intertwined with politics and a political agenda. Pragmatism arises out of actions, situations, and consequences rather than antecedent conditions. Finally, positivist knowledge claim or philosophy holds a deterministic philosophy in which causes probably determine effects or outcomes. Thus, the problems studied by positivists reflect the need to identify and assess the causes that influence outcomes (Creswell, 2009). The main objective of this study was to examine determinants which affect financial performance of interest free banking service of selected commercial banks in Ethiopia. Due to this positivism knowledge claim was more appropriate for this study. So, in order to determine the effect of variables deposit mobilization, operational efficiency, liquidity, management efficiency, bank size and growth domestic product on financial performance of Ethiopian commercial banks operating interest free banking service, positivism knowledge claim would be employed.

3.2 Research Approach

According to Creswell (2009) a research approach can be categorized as quantitative research approach, qualitative research approach and mixed research approach, depending on the strategies of inquiry, philosophical stance and specific methods. Mixed research approach is an approach to inquiry that combines both qualitative and quantitative forms. From those qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem.

The process of research concerns emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data. The other one quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures (Creswell, 2009).

Hence, the study was applied quantitative research approach to examine bank specific and macroeconomic factors on financial performance of interest free Banking service of selected commercial Banks in Ethiopia.

3.3 Research design

Research design is a master plan specifying the methods and procedures for collecting and analyzing the required data (Creswell, 2009).

Choice of research design depends on objectives that the researchers want to achieve. According to Creswell (2009), there are three types of research design; these are descriptive research design, exploratory research design and explanatory research design. In explanatory research design, the basic aim is to identify the cause-and-effect relationship between variables. Hence, explanatory research design was used in this study.

3.3.1 Target population

According to national bank of Ethiopia there are twelve commercial banks except full-fledged Islamic banks, launched interest free banking operation since 2013, which are one state owned and 11 private banks. So, twelve commercial banks in Ethiopia (One state owned and eleven private) that have been providing IFB service/window were a target population of the study.

3.3.2 Sampling Technique

Commercial banks in Ethiopia that operate interest free banking service was selected under the study based on the table below;

Table 3.1 List of commercial Banks in Ethiopia providing Interest Free Banking service

<u>NO</u>	Name of commercial Bank	Year of Establishment	Year of launched IFB	Data disclosed on annual report
1	Oromia International Bank	2008	2013	2013/14-2020/21
2	Commercial Bank of Ethiopia	1963	2013	Partly 2015/16- 2020/21
3	United Bank	1998	2014	2015/16- 2020/21
4	Cooperative bank of Oromia	2004	2015	2015/16- 2020/21
5	Nib International Bank	1999	2015	None
6	Wegagen Bank	1997	2015	2019/20- 2020/21
7	Awash International Bank	1995	2016	None
8	Abay bank	2010	2016	None
9	Bank of Abyssinia	1996	2017	Partly 2020-2021
10	Dashen bank	1995	2018	2017/18- 2020/21
11	Buna international bank	2009	2019	None
12	Debub Global Bank	2012	2021	None

Compiled by the author from banks annual report

Since IFB financial report data are not disclosed on the annual report of Nib International bank, Awash International bank, Abay bank, Buna International bank and Debub Global Bank so, they were eliminated from the study. Even though, wegagen bank and bank of Abyssinia have some IFB available data, they were excluded from the study because of fewer years' data.

Dashen bank also excluded from the study after selected as a sample, because even if it started IFB in 2018, but it has not been provided IFB financing until 2020 this causes normality problem in the model.

Therefore, Oromia International Bank (OIB), Commercial Bank of Ethiopia(CBE), Cooperative Bank of oromia(CBO), United Bank(UB) were selected purposively as a sample based on data availability, disclosure, experience, level of involvement and separate financial records.

3. 4. Types and Source of data

According to Kothari (2004), researchers should keep in mind two types of data viz., primary and secondary data. The primary data those which are collected for the first time and thus happen to be afresh or original in nature. The secondary data, on the other hand, are the data which have already been collected by someone. This study was conducted by gathering secondary data from the annual reports audited financial statement of selected commercial banks operating interest free banking service, NBE annual reports and IFB department. Also, various journals, books, websites, directives and thesis were used as background information.

Under this study balanced panel data from the year 2016- 2021 was employed. This is because according to Gujarati (2004) panel data has the advantage of giving more informative data as it consists of both the cross-sectional information, which captures individual variability, and the time series information, which captures dynamic adjustment.

3.5 Method of data collection

The secondary data was collected by extracting relevant and supportive data and information from the secondary data sources. Thus, the study used secondary data, which collected from annual report of the selected commercial banks operating IFB service, NBE annual report and IFB department from the year 2015/16 to 2020/21 G.C

3.6 Method of data Analysis

The data used in this study was computed first by using excel to get ratio and then by using Stata version 15 the collected balanced panel data from the year 2015/16-2020/21 was analyzed using the descriptive statistics, correlation matrix and multiple regressions analysis. In case of the descriptive statistics, the mean, standard deviation, maximum and minimum values used to analyze the trends of the data while, the correlation matrix used to show the relationship exist between the variables used in the study. For this study fixed effect estimation technique was used to estimate and test causal relationship between profitability of the banks and its determinants. The goodness of fit of the model was tested using the coefficient of determination (R-square). Multiple linear regression model assumptions were tested and meet to the model by using Stata. Then, to evaluate the influence of the independent variables on the financial performance of sampled banks a multiple linear regression model and t-statistic was employed.

3.7 Variable definition and measurement

Based on factors such as, empirical evidence of related research findings that the variables have significant or no impact, data availability, geographical location, context of the country, inconsistency of research result and the like, there are different variables used for different studies. Thus, this section indicates the dependent and independent variables which was selected in this study.

Dependent Variable

Return on Asset (ROA)

The return on asset represents the profit gained for each asset dollar and shows how efficiently the financial resources of the bank are being utilized (Bashir, 2003).

The ROA is considered to be one of the most common profitability indicators from both Islamic and conventional banks perspectives (Zeitun, 2012). According to Rivard & Thomas (2006), bank profitability is best measured by return on asset (ROA) for two primary reasons. They indicated one of the primary reasons is that ROA is not distorted by high equity multipliers and the second is that ROA reflects a better measure of a bank's ability to generate returns on its assets as well as it considers financial leverage. Therefore, the dependent variable used in this study is Return on asset and it measures the amount of profit earned relative to the firm's level of investment in total assets. It measured by net income after tax divided by total asset.

Independent Variables

There are different internal and external independent variables considered as a determinant of bank performance. The internal factors under this study include; deposit mobilization, bank size, management efficiency, liquidity and operational efficiency. In addition, growth domestic product (GDP) considered as external factors for this study.

Deposit mobilization

Deposit considered the main source of banks funding and higher deposits can be transformed into financing, which will increase the profitability of the financial institution eventually (Muda, Shaharuddin, & Embaya, 2013). They said it measured by deposit to total asset.

According to Rahel & Maru (2015) it is measured by total deposit to total asset for a given period used as a proxy for deposit mobilized from depositors. In addition, Aslam, Inamullah & Ismail (2016) argue that bank deposits are the liabilities of banks & it can be calculated the proxy of deposit is total amount of total deposit to total assets.

Management efficiency

It is a reflection of management soundness, whereby; the management should offer excellent management skills when controlling cash and increasing productivity leading to higher profits achievements (Ongera, 2020). Management performance is usually expressed through the subjective evaluation of the management system, organizational discipline, control system, staff quality and so on. However, some financial ratios operating expenses to operating income and operating expenses to total assets is usually used to measure the efficiency of bank management Ganesan (2007), Heffernan (2005) and (Ongera, 2020).

Liquidity

According to Abdillah, Hosen & Muhar (2016), liquidity is defined as the ability of a bank to fulfill short term obligation. Financing to Deposit Ratio (FDR) is the proxy of bank's liquidity showing the bank's ability in repaying the obligation of customers that have invested their fund (Muhammad & Herni, 2016). Haron (2004), Rini & Burhany (2020), Hadji Jemal (2021) and Asadullah (2017) also, used for the profitability of Islamic banks measuring liquidity as total financing to deposit ratio.

Operating efficiency

It is used to analyze how efficiently and effectively a company is using its resources to generate sales and increase shareholder value (Moin, 2013). Operational Efficiency is the capability of an enterprise to deliver products / services to its customers in the most cost-effective manner (Khan, Ijaz, & Aslam, 2014). There are several ways of measuring operational efficiency of a bank.

According to Wasiuzzaman & Tarmizi (2010), Rini & Burhany (2020), Muhammad & Herni (2016) and Hadji Jemal (2021), the ratio of cost to income or Total Operating Expenses / Total Operating Revenue is used to evaluate the operational efficiency of Islamic banks. Kosmidau

et.al (2005) and Heffernan and Fu (2008) used the cost to income as their operational efficiency ratio.

Bank size

Size of the bank can be defined as the total assets of the firm. Assets are the most important tool through which any firm could generate more profit (Asadullah, 2017). Bank size provides the evidence of economies or diseconomies of scale in banking (Abu Hanifa, 2015). According to Haron (2004) and Abu Hanifa (2015) Size of the bank is measured by natural logarithm of total Assets

GDP

GDP stands for Gross Domestic Product. Total production and services over specified fiscal period. GDP is measured by annual percentage growth rate of GDP at market prices based on constant local currency.

Table 2.2 Description of the variables, their expected relationship and Sig

Variable	Symbol	Measurement	Expected sign
Dependent Variable			
Return on asset	ROA	Net Income / Total asset	
Independent Variable			
Deposit Mobilization	DM	Total deposit / Total Asset	+
Management Efficiency	ME	Operating expense / Total Asset	+
Liquidity	LIQU	Financing / Deposit	+
Bank size	SIZE	Natural logarithm of Total Assets	+
Operational Efficiency	OPEFY	Operating expense / operating income	-
Gross Domestic product	GDP	Annual growth rate of the economy	+

Source: Author own formulation from empirical Review

3.8 Model Specification

To analyze statistically the determinants of financial performance of interest free banking service of selected commercial banks in Ethiopia, an estimate of a model was help to see the functional relation of internal and external factors to profitability of sampled banks ROA is a proxy of measure. Based on Hausman test fixed effect linear regression model was applied to investigate relationship between financial performance and its determinant factors of selected banks. To apply the linear regression model all its assumptions were met. Hence the general model is;

$$Y_{it} = \alpha + \beta X_{it} + \epsilon_{it}$$

The subscript “i” denote the cross- section and “t” shows the time-series dimension.

Y_{it} is the dependent variable, α is intercept term, β is coefficient that represents the slope of the independent variables and X_{it} is a vector of the independent variables for bank i in time t, $t = 1, T$; $i = 1, N$ and ϵ_{it} is error term

Thus, the general model which consists all of the variables in testing of the study hypotheses is;

$$ROA_{it} = \alpha + \beta_1 * DM_{it} + \beta_2 * OPEFY_{it} + \beta_3 * LIQU_{it} + \beta_4 * ME_{it} + \beta_5 * SIZE_{it} + \beta_6 * GDP_t + \epsilon_{it}$$

Where;

ROA_{it} : return on asset of net income after tax to total asset of ith bank on the year t.

DM_{it} : the ratio of deposit to total asset of ith bank on the year t.

EFY_{it} : the ratio of operating expense to operating income of ith bank on the year t.

$LIQU_{it}$: the ratio of financing to deposit of ith bank on the year t.

ME_{it} : the ratio of operating expense to total asset of ith bank on the year t.

$SIZE_{it}$: natural logarithm of total assets of ith bank on the year t.

GDP_t ; growth rate in Ethiopia on the year t

ϵ_{it} : Error term where i is cross sectional and t time identifier

α : is constant

Chapter four: Data analysis and interpretation

This chapter presents the results of the regression model and their corresponding discussions. Prior to the analysis of regression model diagnostic tests, trend analysis of banks performance, correlation and descriptive analysis have been made. It also presents the analysis of the collected empirical data, portrays the results, and explains the determinants of financial performance of interest free banking service of selected commercial banks in Ethiopia. Those selected banks are include, oromia international bank, commercial bank of Ethiopia, united bank and cooperative bank of oromia.

4.1 Descriptive Statistics

This section presents the descriptive statistics of dependent and independent variables used in the study for the selected banks. The dependent variable used in this study was Return on asset and independent variables were deposit mobilization, management efficiency, liquidity operational efficiency bank size and GDP. Table 4.1 shows the descriptive statistics in which standard deviation (St. Dev), means, minimum and maximum values and results are presented.

Table 4.1 Summary of dependent and Independent variables descriptive statistics

Variable	Obs	Mean	St.Dev	Min	Max
ROA	24	0.0156226	0.0153702	-0.0010233	0.0415127
DM	24	0.9237879	0.0907582	0.6791962	1.033251
OPEFY	24	0.1875599	0.1300593	0.0004387	0.4655712
LIQU	24	0.3104551	0.2282222	0	0.6525144
ME	24	0.0043593	0.0052965	2.67e-06	0.0224298
SIZE	24	21.77955	1.51578	18.21119	24.676
GDP	24	0.0786667	0.014382	0.061	0.101

Source: Stata output 2022

As indicated in the above table 4.1, the descriptive statistics shows that the average value of return on asset measured by net income after tax to total asset of the selected commercial banks

operating interest free banking service was 1.56 percent for the period 2016-2021. This indicates that the sample banks on average can generate 1.56 cents for each birr asset utilized.

It was additionally noted that the minimum value of return on asset is -0.1% and the maximum of 4.1% an indication that some banks were making a loss. It implies that there are a banks which incurred a loss of birr 0.1 from birr 1 investment. Std. Deviation of ROA is 1.54 percent which implies there is no that much dispersion of the data set.

Regarding the independent variables, deposit mobilization which is measured by deposit divided by total assets has a mean value of 92.4 percent with a maximum and minimum value of 103.3 percent and 67.9 percent respectively. This indicated that deposit was the major source of fund and highly near to total asset of the selected interest free banking service under the period of a study. In addition, the standard deviation of the deposit mobilization was 9.1 percent.

Operating efficiency was measured by operating expense divided by operating income and it has a mean value of 18.8 percent with standard deviation 13 percent. This implies that the interest free banking industry on average consume 0.188 cents to generate a single birr revenue. It ranges from a minimum of 0.04 percent to a maximum of 46.6 percent.

Management efficiency was measured by operating expense divided by total asset and it has an average value of 0.44% with a minimum and maximum value of 0 and 2.24 percent respectively. The minimum value shows that, the management utilize asset with a minimum cost due to the banks are not paid interest and alongside with conventional banks. Therefore when the efficiency ratios become low the banks can show more efficient and vice versa.

The liquidity, which is measured as ratio of total financing to deposit, showed that a mean of 31 percent and standard deviation 22.8 percent. It reflected that the selected banks on average 31% become as financing activities from a given deposit for the last 6 years. This implies that Interest free banking service were finance to clients on average 0.31 cents from each deposit collected. In addition, it ranges from minimum value of 0% to maximum value 65.3%. The percentage of zero (0%) depicted that there is a bank without giving financing service to its customers during the study period.

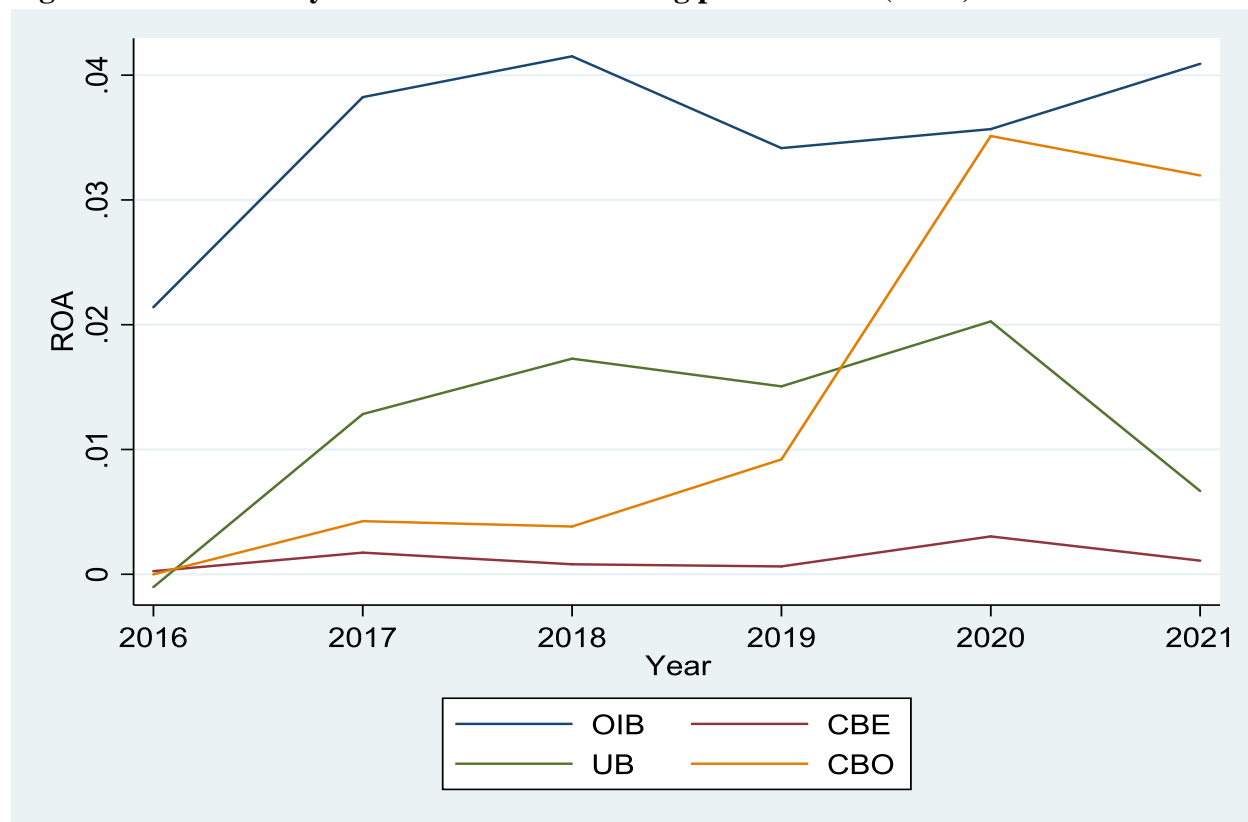
The minimum value 0% was occurred in 2016 by cooperative bank of oromia, which did not start financing during this period.

Bank size measured as natural logarithm (LN) of total asset has a mean value of 21.78 percent and standard deviation 1.516 percent this implies that in the study period the sample IFB services have a small variation in their total asset. The minimum and maximum value is 18.211% and 24.676% respectively.

Finally, from macroeconomic variable growth domestic product was employed in this study and measured by the growth rate of the economy. The mean value of GDP growth rate was 7.9 percent and standard deviation of 1.4 percent, with a minimum of value of 6.1% and a maximum of 10.1% for the last 6 years period.

4.2 Status of IFB financial performance in selected commercial banks

Figure 4.1 Trend analysis of Interest free banking performance (ROA)



Source: Stata output

The result finding in Figure 4.1 above shows that from the period 2016-2017 Return on asset of oromia international bank and united bank interest free banking service increases at increasing rate.

This implies that during this period those banks rate of net income increase higher than relative to its total asset increase, while from the period 2017-2018 ROA of those banks increase at decreasing rate. Moreover, from 2018 to 2019 their return on asset decreases indicates low performance of the bank during this period and after 2019 to 2020 again those banks has been shown slowly increment. However, after 2020 ROA of oromia international bank was indicate increment whereas in the cause of united bank the reverse is true. This reflected that return on asset of oromia international bank and united bank from the period 2016-2021 was displayed volatile character.

From the year 2016 -2019 Cooperative bank of oromia Return of asset on the side of interest free banking service had shown slowly increasing and decreasing trend. But from the period 219 to 2020 its return on asset has shown a greater increment due to increase in net income with respect to total asset was high at that time, in addition providing their deposit in to financing for their clients has been expanding until 2020. Hence, during this period the banks performed well. However, after 2020 goes back to reducing their performance, due to decreasing return on asset.

Finally, as indicated figure 4.1 Commercial bank of Ethiopia interest free banking service Return on asset has shown slightly stable movements from the period 2016-2021.

Generally, united bank, cooperative bank of oromia, Commercial bank of Ethiopia except oromia international bank the minimum starting point of their graph has shown near to zero. This implies that at initial stage those banks merely mobilize deposit and their returns were very low. In addition to this after 2020 all those banks without OIB their return on asset decline. It implies there was shown low performance during this period.

Therefore, those commercial banks operating interest free banking service has been shown ups and down performance for the period under study except CBE which move return on asset slightly.

4.3 Correlation Matrix

Correlation is degree in which two or more variables are related to each other. The sample size is the basic component to decide whether or not the relationship coefficient is distinctive from zero/statistically critical. The values of the relationship coefficient are always between -1 and +1. A relationship coefficient of +1 demonstrates that the two factors are perfectly related in a positive linear form; whereas a relationship coefficient of -1 show that two factors are perfectly related in a negative direction. A relationship coefficient of 0, on the other hand demonstrates that there's no direct relationship between two variables (Brooks, 2008).

Table 4.2 Dependent variable correlation matrix

Variables	(ROA)	(DM)	(OPEF)	(LIQU)	(ME)	(SIZE)	(GDP)
(1) ROA	1.000						
(2) DM	-0.035	1.000					
(3) OPEF	-0.391	-0.025	1.000				
(4) LIQU	0.894	-0.071	-0.404	1.000			
(5) ME	0.612	-0.252	0.208	0.544	1.000		
(6) SIZE	0.078	0.521	0.227	0.079	-0.049	1.000	
(7) GDP	-0.209	-0.207	0.076	-0.346	-0.123	-0.349	1.000

Table 4.2 shows that operating efficiency, deposit mobilization and GDP are negatively correlated with Return on asset implying that as these independent variables increase return on assets decrease and vice versa. On the other hand, size, liquidity and management efficiency are positively correlated with return on assets. That means these independent variables increases, the dependent variable (return on asset) also increases.

The above table also shows that liquidity and management efficiency have strong associated with ROA while, Size and deposit mobilization have weak association with ROA. On the other hand, GDP and operating efficiency have moderate association with ROA.

4.4 Diagnostic tests

The diagnostic tests were undertaken to ensure that the assumptions of classical linear regression model are concerned, the coefficient estimators of both α (constant term) and β (independent variables) that are determined by ordinary least square (OLS) will have a number of desirable properties, and usually known as Best Linear Unbiased Estimators (BLUE).

4.4.1 Test for Normality

According to Brooks (2008) the normality assumption must be fulfilled, in order to conduct hypothesis test about the model parameter. Thus, the normality assumption is about the mean of the residuals is zero. According to Brooks (2008) one of the most commonly applied tests for normality is the Bera-Jarque (BJ) test.

A normal distribution is anticipated to have a kurtosis coefficient of 3 and Skewness coefficient of 0 Kurtosis measures how far the tails of the distribution. The extent to which a distribution is not symmetric about its mean value is measured by Skewness (Hadji Jemal, 2021). In case of this study, the researcher used JB normality test to test the null hypothesis of normally distributed errors assumptions.

The hypothesis for the normality test was formulated as follow:

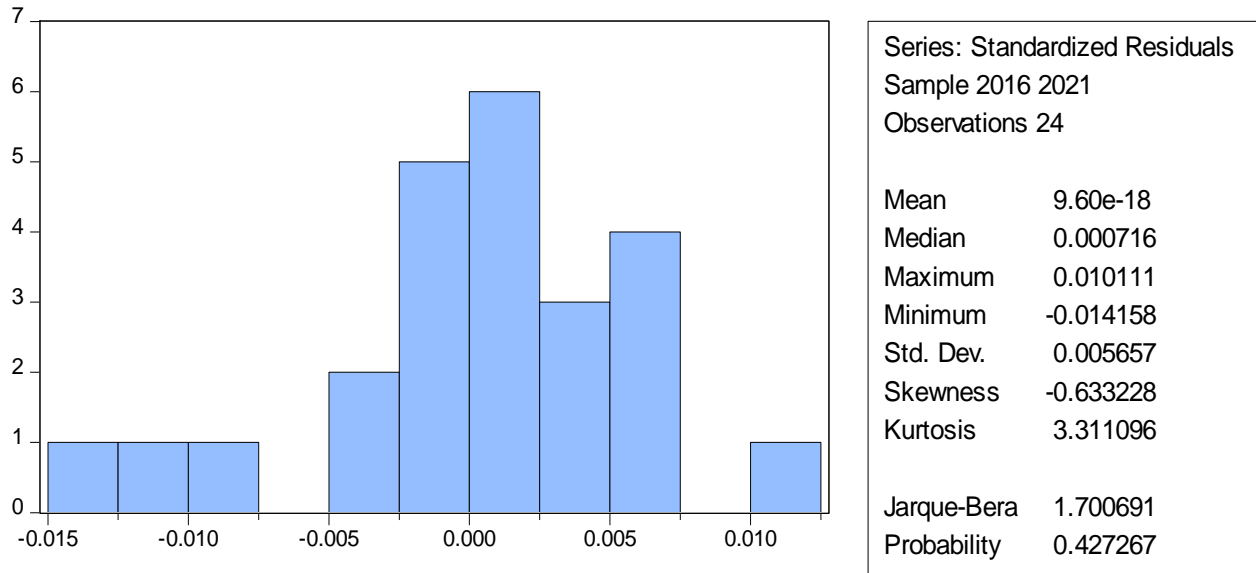
H0: Error term is normally distributed

H1: Error term is not normally distributed

$\alpha = 0.05$

Decision Rule: if P value of JB less than significant level 0.05, Reject H0. Otherwise, do not reject H0.

Figure 1.2 Jarque -Bera Normality test



Source: Eview 10 result

Based on the above figures the analysis of the data resulted in the probability value (p value) for Jarque-Bera test of 0.43, greater than alpha value of 0.05, its skewness is between -1 and +1, and its kurtosis is not by far large from 3. This implies that accept the null hypothesis, meaning the residuals were normality distributed.

4.4.2 Test for Heteroscedasticity

As indicated by Brooks (2008) Heteroscedasticity means that error terms do not have a constant variance. The estimators of the ordinary least square method are inefficient and also hypothesis testing is no longer reliable or valid if Heteroscedasticity occur. This causes it will underestimate the variances and standard errors. The Heteroscedasticity problem is detected by several tests, which are Park Test, Glesjer Test, Breusch-Pagan-Goldfrey Test and White's Test.

In this study to check the existence of Heteroscedasticity Breusch-Pagan / Cook-Weisberg test was used. As indicated below Chi-Square was 2.05 and p-Value were 0.1518 which is higher than 0.05, indicated that the null hypothesis of constant variance is failed to reject at 5% significant level. Hence, there is no Heteroscedasticity problem in the model.

Figure 4.3 Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity

```
. estat hettest  
  
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity  
Ho: Constant variance  
Variables: fitted values of ROA  
  
chi2(1)      =    2.05  
Prob > chi2  =    0.1518
```

Source: Stata output 2022

4.4.3 Test for Multi-co Linearity

Multicollinearity means the existence of a perfect or exact, linear association among some or all explanatory variables. The regression coefficients of the explanatory variables are indeterminate and their standard errors are infinite if multicollinearity is perfect. If multicollinearity is lower than perfect, the regression coefficients, although determinate, possess large standard errors (in relation to the coefficients themselves), which implies the coefficients cannot be estimated with great precision or accuracy.

According to Gujarati (2004), the standard statistical method for testing data for multicollinearity is analyzing the explanatory variables correlation coefficients and variance inflation factor (VIF). Different level of correlation was suggested by many Authors to judge for multi co Linearity presence. Correlation coefficient about 0.8 or more pair-wise or zero-order coefficient between two repressors is out of the recommended range of multi co-linearity which is (-0.8 or 0.8), is existence of serious problem for multicollinearity (Gujarati, 2004). There is no multicollinearity among explanatory variables variance inflation factor should be less than 10 and tolerance value should be greater than 0.1 or 10%.

Table 4.3 Independent variable correlation matrix

Variables	(DM)	(OPEF)	(LIQU)	(ME)	(SIZE)	(GDP)
(1) DM	1.000					
(2) OPEF	-0.025	1.000				
(3) LIQU	-0.071	-0.404	1.000			
(4) ME	-0.252	0.208	0.544	1.000		
(5) SIZE	0.521	0.227	0.079	-0.049	1.000	
(6) GDP	-0.207	0.076	-0.346	-0.123	-0.349	1.000

Table 4.4 VIF

	VIF	1/VIF
LIQU	2.915	.343
ME	2.343	.427
OPEFY	2.142	.467
SIZE	1.809	.553
DM	1.518	.659
GDP	1.299	.77
Mean VIF	2.004	.

Source: Stata output 2022

Table 4.3 above indicates existence of the highest correlation of (0.544) between liquidity and management efficiency. The next higher correlation is between size and deposit mobilization which is (0.521). Accordingly, all correlation results are below 0.8 shows that multicollinearity is not a potential problem for this study. In addition as indicated in table 4.4 the maximum variance inflation factor was 2.915 the minimum tolerance value was 0.34 as well as the average variance inflation factor was 2 which was very minimal. It also confirmed that there is no evidence for multicollinearity problem in the model.

4.4.4 Test for autocorrelation

It is assumed that the covariance of the errors over time is zero or the errors are uncorrelated one another. If the errors are correlated with one another, it would be stated that there is serial auto correlation.

The Breusch–Godfrey test is a test for autocorrelation in the residuals in a regression model. It makes use of the errors from the model being considered in a regression analysis, and a test statistic is derived from these.

Ho: There is no serial correlation with in errors term in the model

H1: There is serial correlation with in errors in the model.

Table 4.5 Breusch-Godfrey LM test for autocorrelation

Breusch-Godfrey LM test for autocorrelation chi2	Df	Prob>Chi2
0.018	1	0.893

Source: Stata output 2022

Breusch-Goldfrey LM test for autocorrelation result shows that chi-square statistic of 0.018 with a p-value of 0.893. So, fail to reject null hypotheses which says, there is no serial correlation in the residual.

4.4.5 Test of Stationarity

As a rule of thumb, non-stationary data are unpredictable and cannot be modeled or predicted. Using non-stationary panel data results in an output that is spurious in a sense that there is a sign for the existence of a relationship between two variables where one does not exist.

Figure 4.4 Levin – Lin - Chu unit root – Test

Levin-Lin-Chu unit-root test for ROA

Ho: Panels contain unit roots	Number of panels =	4
Ha: Panels are stationary	Number of periods =	6

AR parameter: Common	Asymptotics: N/T -> 0
Panel means: Included	
Time trend: Not included	

ADF regressions: 1 lag

LR variance: Bartlett kernel, 5.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-13.2581	
Adjusted t*	-11.0777	0.0000

Source: Stata result

In the above figure the p-value is less than 5% level. Therefore, reject the null hypothesis that the panel contains unit roots. Hence, the panel data in this research is stationary and can be used for hypothesis testing.

4.4.6 Hausman Test

There are two types of panel estimator approaches that can be employed, namely: fixed effects models and random effects models (Brooks, 2008).

According to Brooks (2008) the simplest types of fixed effects models allow the intercept in the regression model to differ cross-sectionally but not over time, while all of the slope estimates are fixed both cross-sectionally and over time. And also the random effects approach proposes different intercept terms for each entity and again these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be identical both cross-sectionally and temporally. Hausman test was employed to decide which estimator to best connected for this model.

If the probability value (p value) for Hausman test greater than alpha of 0.05 the Hausman test will be statistically insignificant, and the null hypothesis will be accepted in favor of the alternative. Accepting the null hypothesis implies that the random effects estimator will be apply to the model, the inverse is also true.

Ho; random effect model is appropriate

H1; fixed effect model is appropriate

Table 4.6 Hausman specification test

	Coef.
Chi-square test value	12.644
P-value	0.049

Source: Stata output 2022

In the above table 4.6 indicate that the Chi- Sq. statistics for Hausman test is 12.644 and the probability value (p-value) is 0.049, which is less than 5% alpha value. Therefore, reject the null hypothesis which, says random effect model is appropriate and accept the alternative hypothesis. This indicates that individual effects in the model are fixed.

4.4.7 Ramsey RESET Test for Omitted Variables

RESET stands for Regression Specification Error Test and was proposed by Ramsey in 1969. This test is made on the basis of null hypothesis that tells “model has no omitted variables”.

Ramsey RESET test using powers of the fitted values of ROA

Ho: model has no omitted variables

$$F(3, 14) = 2.83$$

$$\text{Prob} > F = 0.0766$$

Ramsey RESET test using powers of the fitted values of ROA shows that the p-value is not less than 0.05. Hence, it is impossible to reject the null hypothesis and conclude that our model is fit; or there is no specification error in the data. So, it is safe to say that there is no omitted specification in data.

4.5 Regression result analysis

Regression analysis was done to estimate and predict the value of dependent variable based on the value of independent variables. Accordingly, the regression result was made and coefficients of the variables were estimated via Stata version 15 software.

Table 4.7 Fixed effect model Regression Result

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
DM	0.009	0.024	0.38	0.711	-0.042	0.06	
OPEFY	-0.019	0.014	-1.38	0.189	-0.049	0.01	
LIQU	0.051	0.014	3.57	0.003	0.021	0.082	***
ME	0.186	0.451	0.41	0.687	-0.781	1.153	
SIZE	-0.001	0.002	-0.56	0.582	-0.005	0.003	
GDP	0.051	0.099	0.52	0.615	-0.161	0.263	
Constant	0.015	0.043	0.34	0.736	-0.078	0.108	
Mean dependent var							
0.016		SD dependent var		0.015			
R-squared		0.748		Number of obs		24	
F-test		6.934		Prob > F		0.001	
Akaike crit. (AIC)		-179.364		Bayesian crit. (BIC)		-171.117	
*** $p < .01$, ** $p < .05$, * $p < .1$							

Source: Stata output version 15

Table 4.7 shows that, result for the multiple regression model fixed effect estimation technique which evaluates the impact of independent variables on dependent variable in assessing the determinants of financial performance of interest free banking service of commercial banks in Ethiopia.

Thus, based on the result above Table 4.7 the following model was developed to examine the financial performances of interest free banking service of selected commercial banks in Ethiopia.

$$\text{ROA} = 0.15 + 0.009 \cdot \text{DM} - 0.019 \cdot \text{OPEFY} + 0.051 \cdot \text{LIQU} + 0.186 \cdot \text{ME} - 0.001 \cdot \text{SIZE} + 0.051 \cdot \text{GDP} + \varepsilon$$

R-squared is also known as the coefficient of determination, or the coefficient of multiple determinations for multiple regressions. It is a statistical measure of how close the data are to the fitted regression line and it indicates how much the dependent variable explained by explanatory variables. As depicted in table 4.7 above, the R squared is 0.748 which indicates that about 74.8 percent of the change of dependent variable (ROA) is explained by deposit mobilization, operating efficiency, liquidity, management efficiency, bank size and GDP. In other word, about 74.8 percent of the variability in the dependent variable is explained by the independent variables that are included in the model. This indicates the regression model can strongly explain the dependent variables.

The F-statistics is used for testing the fitness of the model. In Table 4.7 the static value of F is 6.934 and it exceeds the critical value of F. Hence, the regression as whole is significant; this means that the explanatory variables reliably predict Return on asset. Furthermore, the P-value is 0.001, which also indicates that ROA of the selected commercial banks interest free banking services predicted with almost 98 percent probability by all independent variables together and indicates a statistically significance relationship among them. Therefore, the F-statistics of the regression result F test = 6.934 and its p-value 0.001 proves there is a significant relationship between the financial performance (ROA as a proxy) and the determinant explanatory variables (deposit mobilization, operating efficiency, liquidity, management efficiency, bank size and growth domestic product). In simple words, the F-statistic of 6.934 suggests that the model fits the data significantly.

The sign of a regression coefficient says that whether there is a positive or negative relationship between each independent variables and the dependent variable (ROA). A positive coefficient denoted that as the value of the independent variable increases, the mean of the dependent variable also tends to increase. A negative coefficient indicated that as the independent variable increases, the dependent variable tends to decrease.

The coefficient value signifies how much the average of the dependent variable changes given a one-unit shift in the independent variable while keeping other variables in the model constant.

This property of keeping or holding the other variables constant is crucial because it allows that to assess the effect of each variable in isolation from the others.

4.5.1 Deposit mobilization on Return on Asset (ROA)

It was measured by total deposit to total asset ratio. But in the case of interest free banking service total deposit were obtained from bank customers. The finding of the study revealed that deposit mobilization influenced positively towards return on asset since the coefficient value marked was 0.009. This means that keeping other things remain constant increase of deposit ratio by 1% would increase return on asset by 0.009%, but the relationship is statically insignificant at 5% significant level due to its p value is greater than 0.05 as shown in table 4.7 above. The study supported by Muda, Shaharuddin, & Embaya (2013) they said it has positive relation with banks profitability, however this result contradict with the finding of Khan, Ijaz & Aslam (2014) and Rahaman & Akhter (2015), they indicated that deposit has negative and significant impact on return on asset.

4.5.2 operating efficiency on Return on asset

As indicated the table 4.7 the regression result of the beta coefficient for the variable operating efficiency is -0.019 with p value of 0.189. The coefficient of operating efficiency is negative. This implies that, other factors being constant, 1% decrease in expense, results in an increase of return on asset by 0.019% but statistically insignificant relationship towards return on asset at 5% significant level. This indicates that if the listed commercial banks operating interest free banking service in Ethiopia are able to exercise efficient cost management practices, they would have much to profit. However, under interest free banking service cost of funding is minimal due to no payment is paid for depositor of Wadi'ah saving and Qard accounts that have safe custody natures. The result is supported by the finding of Hadji Jemal (2021); Abduh & Idrees (2013) also support with insignificant findig, but contradict with positive direction.

4.5.3 Liquidity on Return on Asset

Financing to deposit ratio is showing the bank's ability in repaying the obligation of customers that have invested their fund. According to Table 4.7 above, liquidity is positively related with return on asset with a coefficient estimate of 0.051 with p value of 0.003, which is significant at 1% significant level. This suggests that an increase in financing to deposit ratio results increase

in return on asset. The coefficient of liquidity 0.051 implies that holding other factors constant 1% increase in liquidity leads to 0.051% increase in return on asset of sampled commercial banks operating interest free banking service in Ethiopia. This means, when banks engaged in granting more financing to clients it can have more profitable. This result was supported by Supiyadi & Arief (2018), Asadullah (2017), Wasiuzzaman & Tarmizi (2010), Hadji Jemal (2021) and Haron & Azmi (2004).

This study proof the hypothesis developed in chapter one which said, “Liquidity has positive and significant effect on financial performance of interest free banking service for selected commercial banks in Ethiopia”.

4.5.4 Management efficiency on Return on asset

Efficiency is an important factor in the competitiveness of banks, and it shows how well a bank performs in terms of available resources. In the regression result displayed in table 4.7, the coefficient value of Management efficiency is 0.186 reveals that positively related with return on asset. It showed that if Management efficiency changes by 1%, there would be 0.186 changes in performance of interest free banks with the holding of other predictors constant. But the p value of management efficiency is above 0.05 implies that management efficiency has insignificant relationship with return on asset at 5% level of significance. The result has inconsistent with the finding of Ongera (2020) say it was significant, but agree with positive relationship.

4.5.5 Bank size on Return on asset

The above table 4.7 depicted that, the coefficient of Bank size measured by LN of Total Asset is -0.001. Thus, regression result shows that relationship between bank size and return on asset is negative. A coefficient of size -0.001 implies that holding other independent variables constant on average a 1% decrease in size leads to increase return on asset by 0.1%, but the relationship is statistically insignificant at 5% significant level. Larger size of the banks causes to be less profitable implying management inefficiency to properly utilize the resources.

The result of this study has consistent with the finding of Wasiuzzaman & Tarmizi (2010), Simai (2013), Bakkeri & Ali (2020), besides Hassan & Ahmed (2019) with negative relation. But the result has contradicts with the finding of Abduh & Idrees (2013), Haron (2004) and Abu Hanifa (2015).

4.5.6 Growth domestic product on Return on asset

The regression result in table 4.7 indicates that GDP growth rate was statistically insignificant at 5% significant level; despite it has positive relation with return on asset. A coefficient of GDP 0.051 in the regression result indicates that a 1% increment in GDP growth rate leads to 0.051% increment of return on asset of sampled interest free commercial banks keeping other things remain constant. This implies due to GDP rises, it will be followed by an increase in income so that the ability to save also increases. The Insignificant result was supported by Siami (2013), Asadullah (2017) and Hadji Jemal (2021). But this study contradict with Muhammad & Herni (2016), Ghazali (2008), Wasiuzzaman & Tarmizi (2010) they found GDP has positive and significant relationship with profitability of islamic or interest free banking aproxy of retun on asset.

Table 4.8 Summary of Hypothesis

Hypothesis	Independent variables	Expected relationship with (ROA)	Actual result	Status
Hypothesis 1	DM	Positive & significant	Positive & Insignificant	Reject
Hypothesis 2	OPEFY	Negative & significant	Negative & Insignificant	Reject
Hypothesis 3	LIQU	Positive & significant	Positive & significant	Accept
Hypothesis 4	ME	Positive & significant	Positive & Insignificant	Reject
Hypothesis 5	SIZE	Positive & significant	Negative & Insignificant	Reject
Hypothesis 6	GDP	Positive & significant	Positive & Insignificant	Reject

Chapter five: Conclusion and Recommendation

5.1 Conclusion

Interest free banking has emerged and grown rapidly since 2013 in Ethiopia. The main objective of this research was to investigate the determinants of financial performance of interest free banking service of selected commercial banks in Ethiopia.

Variables were divided into internal and external variables in the study. The internal variables included deposit mobilization, operating efficiency, liquidity, management efficiency and bank size while Gross domestic product included as external variable. The return on asset (ROA) was considered as a measurement of financial performance. A data of four commercial banks, which operate interest free banking service were considered and covered from the year 2016 to 2021. Those data were analyzed using descriptive statistics and multiple linear regression analysis. The financial performance status was also analyzed by using trend analysis of return on asset.

Based on the regression result, it is observed that liquidity has positive and significant impact on return on asset, while the other variables deposit mobilization, operating efficiency, management efficiency, bank size and gross domestic product has insignificant effect to return on asset which, means do not have direct impact to profitability. Thus, we can conclude that liquidity has the only one variable that can significantly explain the financial performance of interest free banking service of sampled commercial banks in Ethiopia. This denoted that banks have more profitable, when it engaged in granting more financing to clients.

The study indicates that operating efficiency has no significant impact on financial performance of interest free banking service of selected commercial banks. This is due to no payment is paid for depositor of Wadi'ah saving and Qard accounts that have safe custody natures. Hence, cost of funding is minimal under interest free banking service. Although, management efficiency has shown a positive direction, it has no impact on financial performance of IFB. The reason behind there is no proper allocation of costs and resources between the interests free window operations and conventional one.

The regression result shows that bank size has insignificant impact on financial performance of interest free banking service. This is because of interest free banking investment coverage is less.

The study indicated that deposit mobilization has no impact for the financial performance of interest free banking service of sampled commercial banks even if the direction is positive. In the sense that those banks accept cash and hold more of deposits as idle resources.

Gross domestic product has also insignificant impact for the financial performance of interest free banking service of selected commercial banks in Ethiopia. The reason is that GDP growth rate have not been varied a lot in the period under study, moreover, it can be related due to Interest free banking is a recent stage of development in the country.

The trend analysis of this study has been shown ups and downs of return on asset (except, CBE return on asset slightly movement) of selected commercial banks operating interest free banking service in Ethiopia from the period 2016-2021. This indicates that interest free banking service of those sampled commercial banks in Ethiopia ROA increase in some period of time and decrease in another period of time. Finally, this implies that Commercial banks operating interest free banking service has been shown ups and downs performance for the period under study.

5.2 Recommendation

- ✓ Based on the study finding, the financial performance of interest free banking service of selected Commercial Banks in Ethiopia mainly affected by the only internal factor which, is liquidity. Therefore, interest free banking service of those commercial banks should control, emphasize or give more attention to the liquidity of banks to improve their profitability.
- ✓ The interest free banking service should concentrate on financing activities or loan in addition to deposit mobilization in order to improve their financial performance.
- ✓ Based on the result of management and operating efficiency, those selected commercial banks that offer IFB service in Ethiopia, should establish resource sharing and cost allocation framework for the dedicated window operation. This could help managements to have proper management or better decisions with regard to resource and costs of the IFB services.

5.3 Suggestion for future research

The focus of the study was to examine determinants of interest free banking service of selected commercial banks in Ethiopia. This study was employed only secondary data of those banks and common variables due to data constraint. Therefore:-

- The study suggests that similar study be undertaken for expanding the study by including the newly full-fledged Islamic banks and others interest free banking services alongside with conventional banks this helps to collect more data and have bigger sample size for analysis.
- It also recommended for the future research to be motivated comparison between interest free banking service and conventional banking financial performance determinants.
- Finally, it suggests for the future research to be extended the study by adding primary data and qualitative method for better understanding and in order to include variables like Shari'ah Advisory board, Shari'ah compliance risk, and non-performing financing.

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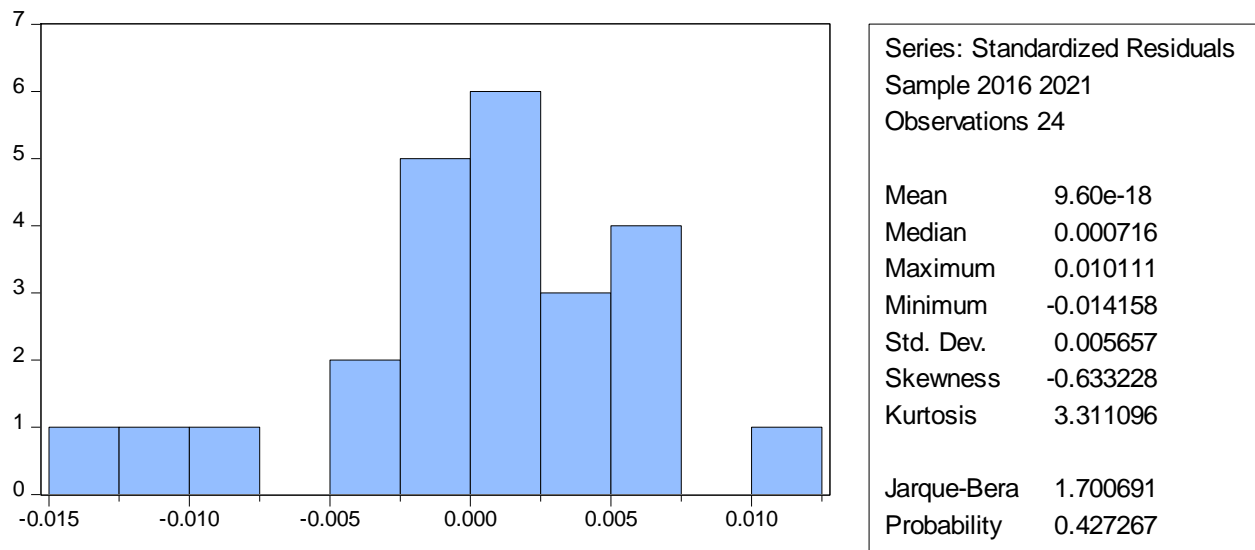
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Appendix I: Raw data used in the regression analysis

Name of banks	code	Year	ROA	DM	OPEFY	LIQU	ME	SIZE	GDP
OIB	1	2016	0.02141	0.87003	0.31455	0.44225	0.01403	20.96859	0.08000
	1	2017	0.03824	0.84069	0.17645	0.50333	0.01171	21.60488	0.10100
	1	2018	0.04151	0.91799	0.12728	0.53805	0.00865	21.91186	0.07700
	1	2019	0.03415	0.93507	0.11182	0.45506	0.00614	22.21470	0.09000
	1	2020	0.03568	0.89170	0.06811	0.61327	0.00372	22.21104	0.06100
	1	2021	0.04091	0.94720	0.27735	0.61200	0.02243	22.36223	0.06300
CBE	2	2016	0.00025	0.84228	0.32429	0.05314	0.00168	22.04921	0.08000
	2	2017	0.00174	1.00000	0.36613	0.04852	0.00143	22.53002	0.10100
	2	2018	0.00080	1.00000	0.46557	0.01890	0.00100	23.00716	0.07700
	2	2019	0.00063	0.99504	0.32881	0.02438	0.00044	23.90499	0.09000
	2	2020	0.00304	0.99880	0.12507	0.10209	0.00060	24.20622	0.06100
	2	2021	0.00110	0.99926	0.16015	0.12032	0.00029	24.67600	0.06300
UB	3	2016	-0.00102	0.67920	0.26695	0.11578	0.00486	19.59515	0.08000
	3	2017	0.01284	0.72881	0.13756	0.25430	0.00293	19.98082	0.10100
	3	2018	0.01728	0.90298	0.05489	0.30732	0.00143	20.38569	0.07700
	3	2019	0.01506	0.88227	0.04583	0.44862	0.00143	20.71834	0.09000
	3	2020	0.02027	0.87256	0.14415	0.44524	0.00525	21.06725	0.06100
	3	2021	0.00668	0.86421	0.27236	0.42833	0.00625	21.48403	0.06300
CBO	4	2016	0.00000	0.99543	0.07986	0.00000	0.00001	18.21119	0.08000
	4	2017	0.00426	0.97391	0.00044	0.04721	0.00000	20.01259	0.10100
	4	2018	0.00383	0.99996	0.40369	0.16366	0.00370	21.51991	0.07700
	4	2019	0.00921	1.00000	0.15192	0.44042	0.00236	22.33278	0.09000
	4	2020	0.03512	1.00027	0.05673	0.61621	0.00230	22.58085	0.06100
	4	2021	0.03197	1.03325	0.04148	0.65251	0.00198	23.17368	0.06300

Appendix II: Diagnostic test and other output

A. Jarque -Bera Normality test



B. Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity

```
. estat hettest
```

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
```

```
Ho: Constant variance
```

```
Variables: fitted values of ROA
```

```
chi2(1) = 2.05
```

```
Prob > chi2 = 0.1518
```

C. Hausman specification test

	Coef.
Chi-square test value	12.644
P-value	0.049

D. Multicollinearity test

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) DM	1.000					
(2) OPEF	-0.025	1.000				
(3) LIQU	-0.071	-0.404	1.000			
(4) ME	-0.252	0.208	0.544	1.000		
(5) SIZE	0.521	0.227	0.079	-0.049	1.000	
(6) GDP	-0.207	0.076	-0.346	-0.123	-0.349	1.000

	VIF	1/VIF
LIQU	2.915	.343
ME	2.343	.427
OPEFY	2.142	.467
SIZE	1.809	.553
DM	1.518	.659
GDP	1.299	.77
Mean VIF	2.004	.

E. Breusch-Godfrey LM test for autocorrelation

Breusch-Godfrey LM test for autocorrelation chi2	Df	Prob>Chi2
0.018	1	0.893

F. Levin – Lin - Chu unit root – Test

Levin-Lin-Chu unit-root test for ROA

Ho: Panels contain unit roots	Number of panels =	4
Ha: Panels are stationary	Number of periods =	6

AR parameter: Common	Asymptotics: N/T -> 0
Panel means: Included	
Time trend: Not included	

ADF regressions: 1 lag

LR variance: Bartlett kernel, 5.00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-13.2581	
Adjusted t*	-11.0777	0.0000
