The effect of inflation on the financial sector development in Ethiopia

A Thesis submitted in partial fulfillment for the award of

Master of business administration in finance

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DECLARATION

I Solomon Negeri Feysa, declare that this thesis is the outcome of my effort and I have duly acknowledge all ideas borrowed from several sources while writing this thesis. I also confirm that this has never been presented for the award of any degree in any institution or universities.

Name: - Solomon Negeri Feysa

Signature: ----------

STATEMENT OF CERTIFICATION

This is to certify the thesis entitled **"The effect of inflation on the financial sector development in Ethiopia"** which has been submitted by Solomon Negeri for the award of Master's degree in Business Administration is in line with the research ethics regulation of the university.

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Acronyms

SVAR	Structural Vector Autoregressive
NBE	National bank of Ethiopia
CSA	Central Statistical Agency of Ethiopia
CBE	Commercial Bank of Ethiopia
SMEs	Small and medium-sized businesses
EIC	Ethiopian Insurance Corporation
EISCA	Ethiopian Insurance Supervision and Control Authority
ESX	Ethiopian Securities Exchange
VECM	Vector Error Correction Models
GDP	Generalized Method of Moments
CAR	Capital Adequacy Ratios
NPLs	Non-performing loans
FDI	Foreign Direct Investment
ROE	Return on equity
ROA	Return on assets
WEO	World Economic Outlook
IFS	International Financial Statistics
IMF	International Monetary Fund
EDA	Exploratory data analysis

Abstract

This research investigates the effects of inflation on the progression of Ethiopia's financial sector, particularly the banking sector, from 2000 to 2023. The primary aim was to understand the relationship between inflation and the growth of the financial sector, while the specific aims involved: analyzing the direct effects of inflation, considering the moderating influence of economic growth, determining how fluctuations in interest rates affect the inflation-finance connection, and offering pertinent policy suggestions. A quantitative research methodology was adopted, supported by an explanatory research design to identify causal relationships between macroeconomic variables. The study relied on secondary time series data sourced from the World Bank, International Monetary Fund (IMF), and National Bank of Ethiopia (NBE). Data analysis was conducted using STATA statistical software 2.0 version, applying linear regression models. The Return on Assets (ROA) was used as a proxy for financial sector development, with inflation as the main independent variable and real GDP and interest rate as control variables. The regression findings reveal that inflation negatively affects the profitability of Ethiopia's banking sector, with a coefficient of. Though only marginally statistically significant, the result is economically meaningful and consistent with international literature. In contrast, real GDP was found to have a statistically insignificant and weak negative effect on ROA, suggesting that overall economic growth does not directly boost bank profitability in the Ethiopian context. Likewise, interest rate volatility exhibited an extremely large but statistically insignificant negative coefficient, indicating possible data scaling issues or limited impact due to interest rate regulations. Overall, the study concludes that controlling inflation is critical for maintaining financial sector stability and profitability. Finally the study recommended that to maintain the financial sector development the focus must be

Keywords: ***inflation, monetary policy, financial sector, time series data, performance analysis, STATA***

CHAPTER ONE: INTRODUCTION

1.1 Chapter Introduction

This introduction part explain the very nature of the relationship between inflation and the financial sector development with respect to different studies in addition it explains the need for the research.

1.2 Background of the Study

A fundamental economic phenomena known as inflation is defined as a long-term, steady rise in the average price of goods and services. It reduces the purchasing power of money, which has an effect on the financial industry as well as other economic sectors. Inflation has always been a problem in Ethiopia, affecting both economic progress and stability. A fundamental economic phenomena known as inflation is defined as a long-term, steady rise in the average price of goods and services. It reduces the purchasing power of money, which has an effect on the financial industry as well as other economic sectors. Inflation has always been a problem in Ethiopia, affecting both economic progress and stability.

Inflation has a variety of effects on the financial industry worldwide. High inflation can make loans and deposits less valuable in actual terms, which would hurt banks and other financial institutions' bottom lines. Inflation, according to Fischer and Modigliani (1978), can also raise economic uncertainty, which raises interest rates and discourages investment in financial instruments. Moreover, because of the heightened uncertainty and lower corporate earnings that accompany high inflation, the stock market typically responds negatively to it (Fama, 1981).
Elevated inflation has the potential to devalue currency and impact the actual worth of banks' assets and liabilities. An increase in inflation reduces the real value of loan repayments and thus banks' interest revenue. On the other hand, if inflation increases, bank operating costs like salaries and other overhead tend to increase as well, which reduces profit margins. Boyd, Levine, and Smith (2001) suggest that there exists a negative correlation between inflation and the performance of financial intermediaries, such as banks, due to the latter's detrimental effects on financial intermediation through increased volatility and uncertainty.

Because inflation affects capital costs and business profitability, stock markets are susceptible to it. In an effort to limit price increases, central banks frequently raise interest rates in response to rising inflation. An increase in interest rates makes borrowing more expensive for businesses, which can lower their earnings and, as a result, the value of their shares. Research such as that conducted by Geske and Roll (1983) has demonstrated that stock returns typically have a negative correlation with inflation because inflationary pressures have the potential to reduce the future cash flows from investments' buying power.

Additionally, inflation has a big impact on the bond market. Since bonds have fixed interest rates, their real return decreases with inflation, which makes them less appealing to investors. Due to investor need for higher returns to offset the heightened inflation risk, this may result in higher yields on current bonds, and consequently lower bond prices. Bond market volatility is significantly influenced by the sensitivity of bond prices to inflation, as shown by Mishkin (1992).

The impacts of inflation also affect the insurance industry. Insurance companies are required to factor inflation into their reserve requirements and premium computations. Elevated inflation rates may lead to a rise in claim values, so impacting the insurance firms' bottom line. Inflation can result in increased claim costs, as demonstrated by Brouhns, Denuit, and Vermunt (2002), necessitating premium adjustments by insurers in order to stay profitable.

Saver and borrower behavior is impacted by inflation, which has an overall effect on the financial intermediation process. Because of the decline in the real value of money, high inflation can discourage savings and reduce the amount of money available for lending. However, because the actual burden of debt repayments gradually lessens, it may incentivize borrowing. Fischer (1993) emphasized that low and stable inflation guarantees the predictability and stability of the financial system, which is essential for efficient financial intermediation.

In order to preserve price stability, numerous central banks throughout the world have embraced inflation targeting as a framework for monetary policy. Central banks seek to anchor inflation expectations through the establishment of explicit inflation targets, which can have a favorable impact on the performance of the financial sector. Svensson (1997) underlined that credible and explicit inflation targets can enhance economic decision-making, lower uncertainty, and promote financial market stability.

Over the past few decades, Ethiopia has seen severe inflationary pressures. According to data from the Central Statistical Agency of Ethiopia (CSA), inflation rates have varied greatly, occasionally rising to double digits. The Ethiopian financial industry, which includes banks, insurance providers, and the emerging stock market, has faced significant difficulties as a result of this inflationary volatility.

Ethiopian banks are impacted by inflation since it raises operational expenses and lowers the true worth of their financial assets. Since banks play a significant role in the financial industry, their performance is a vital sign of the industry's general health. High levels of inflation in Ethiopia have been linked to lower bank profitability as a result of higher expenses and lower actual loan income, per a study by Yimer (2019).

Despite its relative underdevelopment, the Ethiopian stock market is susceptible to the impact of inflation. Low stock prices and diminished investor confidence can result from high inflation. High inflation's unpredictability deters long-term investments, which are essential to the growth of the stock market (Mundel, 1963).

The relationship between inflation and financial sector performance can be understood through several economic theories. The Quantity Theory of Money suggests that an increase in money supply leads to higher prices if the supply of goods and services does not increase proportionally (Friedman, 1963). The Fisher Effect postulates that the real view rate is equal to the nominal interest rate minus the expected inflation rate, indicating that inflation expectations directly affect interest rates and financial sector performance (Fisher, 1930).

There is a wealth of study on how inflation affects the financial sector in industrialized economies, but little of it focuses on Ethiopia. This study uses up-to-date data and sophisticated econometric models to provide a thorough analysis of how inflation impacts Ethiopia's financial sector's development, with the goal of closing this gap.

1.3 Organizational Background

Ethiopia's financial sector includes a number of organizations that are essential to the country's economic growth, such as commercial banks, insurance providers, microfinance institutions (MFIs), and the developing stock market. These organizations have a big impact on risk management, credit provision, savings mobilization, and investment facilitation.

A vital part of Ethiopia's financial system, the banking industry consists of a wide range of institutions that are essential to the nation's economic growth. The industry, which is dominated by commercial banks that are both state-owned and privately held, makes it easier to mobilize funds and provide credit, which is necessary for investment and economic expansion. The largest and oldest bank in Ethiopia is the Commercial Bank of Ethiopia (CBE), which was founded in 1942 and has several branches throughout. It provides a comprehensive variety of financial services. Private Banks like Awash Bank and Dashen Bank have also become important players in the industry alongside CBE, fostering more competition and service innovation (CBE, 2023; Awash Bank, 2023; Dashen Bank, 2023).

The National Bank of Ethiopia (NBE), which maintains prudential regulation compliance and guarantees financial stability, provides regulatory oversight that serves as the foundation for the sector's operations. In addition to administering Ethiopia's foreign currency operations, the NBE is also responsible for overseeing financial institutions and creating monetary policy. Reforms aimed at encouraging digital financial services and liberalizing financial markets are among the recent changes in the industry. These initiatives aim to promote greater economic inclusion in both urban and rural areas, increase efficiency, and expand access to financial services (NBE, 2023).

The Ethiopian banking industry has made great progress, but it still faces obstacles including controlling inflation, providing small and medium-sized businesses (SMEs) with limited access to financing, and the requirement for infrastructure development in order to provide contemporary banking services. In order to maintain the sector's growth trajectory and maximize its potential to promote financial inclusion and economic development in Ethiopia, it is imperative that these issues be resolved. The ability of the nation's banking industry to withstand setbacks and adjust will be crucial in determining how the economy develops in the future (NBE, 2023).MFIs are essential in helping underprivileged groups—such as small businesses and rural communities—get financial services. In response to regional demands, they provide savings plans, microloans, and other financial services (NBE, 2023).

The insurance industry in Ethiopia is vital to the nation's financial system since it offers individuals, companies, and governmental bodies vital risk management and financial protection services. The industry is made up of both state-owned and private insurance firms that provide life insurance, non-life general insurance, and micro insurance, among other products. The

largest and oldest state-owned insurer in Ethiopia, the Ethiopian Insurance Corporation (EIC) was founded in 1976 and has made a substantial contribution to the stability and reach of the insurance sector (EIC, 2023).

In addition, private insurers like United Insurance and Nyala Insurance have become important players, boosting competition and extending the sector's capabilities. These businesses offer a range of insurance products, such as liability coverage, property insurance, and health insurance that are specifically designed to satisfy the various demands of their customers (Nyala Insurance, 2023; United Insurance, 2023). The National Bank of Ethiopia (NBE) and the Ethiopian Insurance Supervision and Control Authority (EISCA) oversee the insurance industry in Ethiopia, guaranteeing financial stability, consumer safety, and adherence to regulations (NBE, 2023; EISCA, 2023).

Enhancing regulatory frameworks, promoting financial inclusion through micro insurance projects, and expanding insurance coverage to underserved groups are some of the recent advances in Ethiopia's insurance business. Infrastructure limitations, poor insurance penetration rates, and a lack of knowledge about insurance products persist despite these developments. In order for the industry to grow sustainably, effectively reduce risks, and promote economic development throughout Ethiopia, it is imperative that these issues be resolved (NBE, 2023).Ethiopian Securities Exchange (ESX), a formal stock exchange, is currently being established. The ESX is a work in progress, but its goals are to improve capital mobilization and offer chances for both domestic and foreign investors to invest (NBE, 2023).

The National Bank of Ethiopia (NBE), which serves as both the central monetary authority and a regulator, is principally in charge of overseeing the regulatory framework that governs the Ethiopian financial industry. The NBE is essential to the upkeep of sound banking practices, the promotion of financial stability, and the protection of consumer interests in a variety of financial institutions, including as commercial banks, insurance providers, microfinance institutions (MFIs), and the emerging stock market. To maintain the safety and soundness of the banking system, the NBE develops and implements monetary policies, establishes prudential regulations, and keeps an eye on compliance in accordance with the Banking Business Proclamation and other pertinent legislation (NBE, 2023).

Apart from the NBE, the Ethiopian Securities Exchange (ESX) Authority regulates the stock market and the Ethiopian Insurance Supervision and Control Authority (EISCA) oversees

insurance businesses within the country's financial sector regulatory framework. Together with the NBE, these regulatory agencies uphold investor interests, enforce transparency, and preserve market integrity. The main goals of recent regulatory improvements have been to strengthen regulatory frameworks, encourage market competition, and advance financial inclusion by means of cutting-edge financial services and products. Even with these developments, the sustained growth of Ethiopia's financial industry still depends on addressing issues including managing systemic risks, strengthening regulatory capacity, and adjusting to technological changes (EISCA, 2023; ESX Authority, 2023).

Ethiopia's financial sector deregulation has been a key policy initiative to promote competition, increase efficiency, and attract international investment. Foreign banks can now enter the market more easily thanks to changes led by the National Bank of Ethiopia (NBE) to open up the banking industry. It is anticipated that this action will expand access to financial services across the nation, improve service delivery, and introduce new technology. Ethiopia intends to bolster its financial infrastructure, draw in foreign investment, and establish itself as a hub for regional finance by loosening rules and lowering entry barriers. This will help Ethiopia promote overall economic growth and development (NBE, 2023).Digital Financial Services: Financial inclusion and access to financial services have increased with the use of mobile banking and electronic payment systems like Tele birr from Ethio Telecom.

The stability and growth trajectory of Ethiopia's financial industry are affected by a number of major concerns. The most important of these difficulties is controlling inflationary pressures, which have the potential to upset financial stability and reduce the efficiency of monetary policy. The inability of small and medium-sized businesses (SMEs) to obtain financing is another ongoing problem that prevents them from growing and making a larger economic contribution. In addition, the industry needs a significant investment in infrastructure development in order to provide contemporary banking services, such as digital banking platforms and increased financial inclusion programs. Improving the sector's resilience, promoting inclusive economic growth, and utilizing its potential to propel Ethiopia's larger development agenda all depend on addressing these issues (NBE, 2023).

1.4 Statement of the problem

A key component of Ethiopia's economic structure, the financial sector facilitates investment, propels economic expansion, and maintains the stability of the country's economy. However, the industry has suffered serious difficulties recently, mostly due to ongoing inflation. Consumer price increases have significant effects on the overall state of the economy as well as on specific financial institutions. This problem statement highlights the pressing need for strategic innovations and efficient policy solutions as it examines the complex consequences of inflation on the growth of Ethiopia's financial industry.

The ability of the financial sector to function effectively is directly impacted by inflation, which is defined as a persistent rise in the average price level of goods and services. Consumers' purchasing power decreases as inflation rates rise, which lowers demand for financial services and products. Banks and other financial institutions may become less profitable as a result of this decline in demand, which will limit their ability to make investments in new technology, increase the scope of their offerings, and promote economic expansion. For example, a National Bank of Ethiopia (NBE) study shows that inflation has a negative impact on households' saving habits because people are less likely to save when rising prices reduce the real worth of their savings (NBE, 2023).

Furthermore, the NBE and other regulatory agencies face a great deal of difficulty in controlling inflation. Interest rate adjustments are frequently part of the central bank's strategy to reduce inflationary pressures, which may unintentionally lead to a volatile financial climate. Interest rates may be changed as inflation increases in an effort to reduce expenditure and keep prices stable. However, financial institutions may find it challenging to control the risks involved in lending and investing as a result of these interest rate swings. Increased borrowing prices brought on by high inflation can deter companies from obtaining loans for growth and innovation, thus impeding the financial sector's development.

Prolonged inflation puts the entire economic system at serious risk, especially because of its effects on financial markets. The allocation of capital is one area where there is a significant distortion because excessive inflation obscures price signals and breeds uncertainty. Given the possibility of declining real returns, investors may shift funds from long-term, profitable investments to assets like gold or foreign currencies that are seen as safer but less advantageous

from an economic standpoint. Due to the underutilization of capital that could otherwise support infrastructure expansion and innovation, this misallocation impedes economic progress. Additionally, the financial markets itself can become more volatile as inflation-linked securities take center stage and push out more established debt and equities markets. These distortions have the potential to reduce capital markets' efficiency and hinder their capacity to foster economic growth (Smith, 2021; Gebremichael & Abebe,

Persistent inflation further exacerbates its negative consequences by undermining trust in the local currency and the financial sector. Both foreign and domestic investors find a currency less appealing when their confidence in its purchasing power declines. For example, if inflation worries grow, foreign direct investment (FDI), which frequently depends on sound financial and economic circumstances, may decline. In addition to lowering the amount of money available, lower FDI inflows also restrict the transfer of knowledge and technology that are essential for sustained growth. At the same time, local savings rates may drop as people look for quick consumption or use speculative investments to protect themselves against inflation, which would further reduce the amount of money available for financial intermediation. Financial market stagnation is made worse by this cycle of diminishing savings and investment, which feeds back into itself to restrict economic growth and destabilize the larger

Inflation also makes it harder for financial firms to manage risk and comply with regulations. Interest rate volatility makes it more difficult to maintain adequate capital buffers, which increases banks' vulnerability to financial shocks. Financial institutions' capacity to lend money to the economy is increasingly jeopardized as they struggle with the growing risks of inflation. According to a study by Jones and Berhanu (2020), high rates of inflation frequently result in higher loan default rates, which can put pressure on financial institutions' balance sheets and weaken their general stability.

Strong monetary policies and extensive regulatory frameworks are necessary to successfully handle the problems caused by inflation. In order to guarantee the financial sector's resilience, policymakers must place a high priority on preserving price stability. Enhancing investor trust, increasing financial institution transparency, and creating a stable economic climate that supports the growth of the financial sector should be the main goals of regulatory actions (Solomon, 2020). By reducing the negative consequences of inflation, such actions can improve the efficiency of financial institutions and protect the economy's general stability (Berhanu et al.,

2023). Furthermore, a flourishing financial industry depends on fostering public and investor trust, which may be achieved through the implementation of clear regulations and efficient oversight (NBE, 2023).

Targeted actions are essential for helping vulnerable people negatively impacted by inflation, in addition to comprehensive regulatory reforms. Promoting inclusion in the financial industry requires making sure that financial services continue to be available to all facets of society. Programs that especially address the requirements of low-income individuals and small businesses those most affected by rising prices should be put in place by policymakers (Smith, 2021; Gebremichael & Abebe, 2022). The financial sector may lessen the negative effects of inflation and increase its ability to promote national economic growth and development by encouraging financial inclusion and offering specialized assistance.

A more robust economy that can resist inflationary pressures and guarantee sustainable growth requires such inclusive measures (Jones & Berhanu, 2020).

Innovation in the financial industry is essential given the aforementioned difficulties. Adopting technological innovations can improve financial services' efficacy and efficiency, increasing their resistance to inflationary pressures. For instance, by giving underprivileged groups access, the use of fintech technologies can improve financial inclusion, lower expenses, and streamline operations (Berhanu et al., 2023). Financial institutions can create new goods and services that meet changing consumer demands by utilizing technology, which will increase demand even in an inflationary climate.

The goal of this research is to present a thorough examination of the complex connections between inflation dynamics and the growth of Ethiopia's financial sector. By examining these relationships, the study aims to pinpoint tactical avenues for developing a financial system that is more inclusive and robust. Policymakers and financial institutions, as well as Ethiopia's general economic stability, must comprehend how inflation affects the growth of the financial sector.

In conclusion, it is critical to address how inflation affects the financial sector in order to guarantee Ethiopia's long-term economic growth and development. All parties involved regulatory agencies, financial institutions, and policymakers must work together to address the interrelationship among inflation, financial stability, and economic performance. It is feasible to lessen the negative effects of inflation and encourage a flourishing financial sector that may

support the economic development of the country by implementing smart policies and creative solutions.

1.5 Research Questions

How does inflation impact the development of the financial sector in Ethiopia? Additionally, the research consider more specific questions such a

1. What impact does inflation have on Ethiopia's financial sector development?

2. Does inflation's effect on the growth of the financial sector get mitigated by economic growth?

3. How does the relationship between inflation and the growth of the financial sector get affected by interest rate volatility?

1.6 Objectives of the Study

1.6.1General Objectives

The general objective of this study is analyzing how inflation affects the financial sector development in Ethiopia.

1.6.2 Specific Objectives

Specifically, the study aims to:

1. To investigate how inflation has affected Ethiopia's financial sector's development.
2. To evaluate how economic growth can mitigate the negative effects of inflation on the development of the financial sector
3. To assess how interest rate volatility affects the connection between inflation and the growth of the financial sector
4. Provide policy suggestions based on the study's conclusions to support the growth and adaptability of Ethiopia's banking industry to inflationary pressures.

1.7 Hypothesis

The researcher formulate the following hypotheses

Inflation and financial sector development mostly connected inversely due to this inflation impacted financial sector harshly by reducing the money power by most having this in mind different empirical studies by Ahmed and Suliman (2011), Khaled Batayneh et al, (2021), Usman (2019), Sehrawat and Giri (2015), Bittencourt (2011), Khan, Senhadji, and Smith (2006), Rousseau and Wachtel (2002),Wolde-Rufael (2008),Teshome (2015) found a negative link between inflation and financial sector development .based on this inflation is hypothesized as follow

Hypothesis 1: Inflation and the growth of Ethiopia's financial sector development are negatively correlated.

Faster economic expansion can lessen the negative impact of inflation on the growth of the financial sector. This implies that the detrimental effects of inflation on the financial sector can be mitigated by economic growth. This is supported by Abbey (2012), Sehrawat and Giri (2015), Bettencourt (2011) therefore economic growth by GDP hypothesized as follow

Hypothesis 2: Economic growth moderates the negative impact of inflation on the expansion of the financial sector, so that higher GDP growth lessens the negative effect. Inflation has a detrimental effect on financial development and interest rate volatility exacerbates the negative effects of inflation by raising the level of uncertainty around financial decisions. This relationship is supported by Rousseau and Wachtel (2002), Bittencourt (2011), Sehrawat and Giri (2015), Abbey (2012), and Khaled Batayneh et al.'s (2021) respectively, based on the assumption that the following hypothesis is formulated

Hypothesis 3: The inverse association between inflation and the growth of the financial sector is reinforced by interest rate volatility.

1.8 Significance of the study

There are different stakeholders that the researcher believes the study will benefit.

Policy makers: The results can assist decision-makers in creating more sensible plans for controlling inflation and fostering a strong and stable banking industry.

Planners: Economic planners can more accurately predict and lessen the negative impacts of inflation on financial markets by knowing the relationship between inflation and the growth of the financial sector.

Investors: understanding how inflation affects investment levels and credit availability can help investors and financial institutions make better decisions.

Researchers and students: By contributing to the body of knowledge already available on the relationship between inflation and the growth of the financial sector, this study will lay the groundwork for future investigations in this field.

1.9 Scope of the Study

This study's conceptual scope looks at how Ethiopia's financial sector development is impacted by inflation between 2000 and 2023. Of the 32 banks registered by national bank of Ethiopia only 16 of them the study purposely selected them based on performance branch expansion capital level and mainly on availability of data to represent the whole country. Due to this the study undertaken banks with nine years of service life accordingly those banks having at least nine years of service life are Cooperative bank of oromiya,Awash Bank,Zemen Bank, Hibret Bank,Wegagen Bank, ,Debub Global Bank ,Abyssinia Bank, Lion Bank, Abay Bank, Addis international Bank, Buna Bank ,Dashen Bank,Enat Bank, Commercial Bank of Ethiopia, Nib bank, lion bank

The study used 24 years of data the study used pure quantitative data only to investigate how much historical data determine effect of inflation on financial sector development. The study also only look at financial institutions in Ethiopia, both urban and rural.

1.10 Limitation of the study

There will be flaws in this study. The data quality is in doubt because the study uses data that was acquired from a variety of sources, and the data provided on the same variable vary from organization to organization. To reduce this issue, though, the study will only gather information from reliable sources

1.11 organization of the study

The remaining part of the paper continues as follows. Chapter two is concerned with the reviews of theoretical and empirical literature related to financial sector development and inflation .Chapter three discusses the research design, econometric model, and estimation procedures to be employed in the study. Chapter four deals with the econometric analysis and its interpretation. Finally, the last chapter concludes the empirical results, provides policy implications on the overall findings, and proposes possible areas for further research at the end of the study.

CHAPTER TWO: LITRATURE REVIEW

2.1Introduction

In This chapter the study reviews both theoretical and empirical literature about the effect of inflation on the financial sector development. The theoretical part explains how inflation and financial sector development relied, seven theoretical views on the causal relationship between inflation and financial sector performance, and proxies of financial sector development. The empirical part summarizes past studies on the subject matter conducted at an international and national level. Finally, this chapter presents the gaps in empirical researches and the conceptual framework of the study, which eases the econometric model construction.

2.2 Theoretical literature review

Financial sector development and inflation have a non-clear relationship, and various economic theories and frameworks shed light on how these two factors interact. These theories and frameworks are relevant.

2.2.1 Quantity Theory of Money

The Quantity Theory of Money (QTM), developed by Irving Fisher (1911) by which highlights the close connection between money supply and price levels in an economy. It is contained in the exchange equation:

MV = PTMV = PTMV = PT
where TTT is the volume of transactions or production, PPP is the price level, VVV is the velocity of money, and MMM is the money supply. This theory suggests that changes in MMM have a direct impact on PPP since it implies that VVV and TTT are largely constant over the short term.

Basically, the idea deals with the kind of inflation which happens due to expansion of money supply without rise in goods and services. Managing the money supply is that what Mainly Fisher's research focused on and how crucial it is to attain price stability to manage the money supply, which is essential for sustaining the efficiency of financial markets and economic expansion (Fisher, 1911).

QTM emphasizes how inflation, which is initiated by a higher expansion of the money supply, can reduced financial stability in the context of the development of the financial sector. Higher inflation dismantle interest rates, lending practices, and investment choices by decreasing the purchase power of money and raising uncertainty. For example, lenders seek higher interest rates to offset the decreasing value of future repayments when inflation predictions rise, which make the cost of borrowing very expensive. The development of the financial and economic sectors depends on financial intermediation, which can be slowed down and credit creation suppressed. The ability of the financial sector to control these processes is very important for promoting consistent growth in nations like Ethiopia, where structural imbalances and monetary expansion frequently cause inflationary pressures (Friedman, 1968; Mishkin, 2007).

Additionally, through credit creation and the money multiplier effect, a strong financial sector is essential for controlling the money supply and reducing inflationary pressures. Through lending activities, banks and other financial organizations effectively influence the overall money supply by amplifying the impact of base money. Effective financial systems, for instance, may make sure that monetary expansion supports profitable investments rather than driving up inflationary spending. But, this mechanism may be adjusted in countries with weak financial sectors, such as Ethiopia, by informal financial practices and insufficient market depth, which would worsen the negative outcome of inflation on the whole economy. Minimizing inflationary pressures and promoting the growth of the financial sector require strengthening financial institutions and improving monetary policy frameworks in order to match the expansion of the money supply with economic production (McKinnon, 1973; Mishkin, 2007).

2.2.2 Keynesian Economics:

In his well-known work of 1936 book The General Theory of Employment, Interest, and Money, John Maynard Keynes brought on the table that inflation might affect the economy in two ways. By promoting investment and expenditure, moderate inflation can increase the number of employment and economic activity in the near term. This is especially important when the economy is struggling and demand isn't high enough to maintain full employment. According to (Keynes, 1936) He maintained that expansionary measures, like as monetary loosening and higher government expenditure, may aid in closing the production gap by increasing aggregate demand and promoting economic recovery.

But Keynesian economics also stress the dangers of perpetual inflation, especially its lethal impact on the financial industry. Since it breeds economic uncertainty Businesses and consumers find it challenging to make long-term plans when inflation gets entrenched. Interest rates may boost as a result of investors seeking larger returns to cancel out inflation risks, which might skew investment decisions. Consequently, higher borrowing costs hinder financial institutions' capacity to disseminate resources effectively, deprived the growth of credit, and reduce consumer expenditure (Mishkin, 2007).

Inflation reduce the real worth of financial assets, due to this it presents additional risks to the financial industry. When nominal returns on savings or fixed-income instruments are outpaced by inflation, consequently depositors and investors lose buying power. Therefore, Capital flight or a greater dependence on unofficial financial methods may result from this decline in trust in the financial system. Inflationary pressures can trigger structural abnormalities in developing economies with less developed financial markets, such as Ethiopia, making the stability and expansion of the sector even more difficult (Arestis & Sawyer, 2004).

Keynes also stressed how vital it is to control inflation expectations. Self-reinforcing cycles of price and wage rises may result if consumers and companies expect inflation to continue. The financial industry is further burdened by such situations since institutions have to deal with increased default risks and unstable market circumstances. In this situation, the role of monetary authorities becomes very important; according to (Blinder, 1997) in order to cool down inflation expectations and keep confidence in the financial sector, transparent and credible policy measures are very crucial.

Keynesian ideas stress the necessity for balanced economic measures in Ethiopia, where inflation has been a long-term problem. Growth can be supported by temporary fiscal and monetary expansion, but policymakers must also take care to stop inflation from getting out of control. It is vital to strengthen the financial sector's ability to control inflation through strong regulatory frameworks and efficient monetary transmission mechanisms. Ethiopia can promote a stable financial climate that supports long-term economic growth by tackling these issues.

2.2.3 Monetarist Perspective:

The fundamental function of the money supply in deciding price levels is highlighted by Milton Friedman's (Friedman, 1968) claim that "inflation is always and everywhere a monetary

phenomenon". Monetarist theory describe that inflation happens when the money supply expands faster than the economy's ability to produce goods and services. This viewpoint places a strong focuses on central banks' duties to control the money supply in order to sustain price stability. Stable prices are essential for markets and financial institutions because they reduce uncertainty, make it possible to allocate resources effectively, encourage investment, and maintain economic growth.

Monetary policy's transmission mechanism describes how adjustments to the central bank's instruments like reserve requirements, interest rates, or open market operations have an impact on the overall economy. These mechanisms directly and predictably influence lending, borrowing, and investment choices in well-established financial systems. A central bank raising interest rates to control inflation, for example, makes borrowing more expensive and deters excessive credit expansion and consumption. This strengthens economic stability over time by lowering inflationary pressures according to (Mishkin, 2007).

In Ethiopia context, the breadth and structure of the financial industry have an effect on how well the monetary transmission mechanism works. Even though the National Bank of Ethiopia (NBE) is very vital to the practicality of monetary policy, a number of variables affect how it impacts inflation and the operation of the financial sector. Sticking on unofficial financial methods, a lack of market growth, and structural inefficiencies can all make it more difficult for policy changes to be applicable. For instance, low banking penetration and financial intermediation may restrict the effect of policy interest rate changes on lending rates and investment choices (Arestis & Demetriades, 1997).

Additionally, monetarists argue that keeping inflation expectations, which have a direct impact on financial stability, seeks the trust of the central bank. Enhancing the NBE's transparency and policy predictability should help stabilize expectations in Ethiopia, where inflation has frequently been erratic. Financial institutions can start more sustainable lending policies, enhance risk management, and accommodate stronger financial markets when inflation expectations are not volatile because they lessen the uncertainty they encounter (Blinder, 1997).

Ethiopia’s experience stresses the importance of policy changes to increase the effectiveness of the transmission of monetary policy. The central bank's capacity to regulate inflation can be improved by supporting the banking industry, encouraging financial inclusion, and lowering dependency on unofficial financial networks. Additionally, enhancing the infrastructure of the

credit market and creating secondary markets for government assets can make the financial sector more reactive to monetary policy actions. In addition to assisting in the management of inflation, these adjustments would resulted a solid basis for the expansion and advancement of the financial sector (McKinnon, 1973).

2.2.4 Financial Repression Hypothesis:

In his influential work Money and Capital in Economic Development (1973), Ronald McKinnon brought the Financial Repression Hypothesis, which deals at how government applied restrictions in financial markets can impede the growth of the financial sector. In order to keep in control price levels, governments frequently set measures like capital controls, high reserve requirements, and interest rate limits in response to rising inflation. By restricting credit availability and demoralize savings and investment, these policies more often result in limitations in the financial system, even though they may control inflation for limited period of time (McKinnon, 1973).

When governments use tools like low interest rates on government bonds, required bank reserves, or directed lending regulations to funnel money to themselves, this is known as financial repression. These regulations frequently make saving in official financial institutions less alluring, which drives savers to unofficial marketplaces. Such inefficiencies eventually lead to a misallocation of resources, which restricts the financial sector's efficiency and growth potential and may exacerbate inflationary pressures (Shaw, 1973).

The impact of financial repression might be especially significant in economies with growing financial markets, such as Ethiopia. For example, interest rate limitations may restrict banks' ability to provide credit by reducing their profitability. Banks' ability to lend is determined by high reserve criteria, while investment search are limited by capital regulations that limit international capital flows. According to Demetriades and Andrianova (2004), these policies have the potential to hinder financial sector competition, hinder its flexibility in response to shifting market conditions, and impede overall economic expansion.

Financial repression's lethal impacts can be reduced by reforms aiming at financial market liberalization. Allowing market-determined interest rates, for example, encourages competition among financial institutions, enhancing their effectiveness and loan availability. In a similar vein, loosening capital controls and cutting back on excessive reserve requirements can boost

private sector investment and improve the financial system's capacity to sustain economic expansion. Additionally, by improving the transmission of monetary policy, these measures can help central banks maintain the stability of the financial sector and successfully control inflation (Arestis & Demetriades, 1997).

Targeted policy actions are necessary to strengthen financial markets and promote formal financial sector involvement in Ethiopia in order to struggle financial repression. Sticking on unofficial financial practices can be reduced by encouraging competition among banks, promoting financial inclusion, and fortifying regulatory frameworks. When paired with reliable monetary policy, these actions help reduce inflationary trends and build a more vibrant financial sector that can support long-term economic growth and stability.

2.2.5 Neo-Keynesian Models:

To explain economic events such as inflation and financial instability, neo-Keynesian models stretch upon traditional Keynesian economics by adding microeconomic foundations like price stickiness and market inefficiencies. Price stickiness, in which prices and wages react slowly to shifts in supply and demand, can trigger inflationary or deflationary episodes and result in long-lasting inefficiencies in the economy. By influencing interest rates, investment choices, and market expectations, these distortions have the potential to place danger in the stability of the financial sector (Mankiw & Romer, 1991).

Price stickiness primarily caused by Long-term contracts, adjustment costs, and behavioral inclinations like anchoring. Because of these rigidities, markets and financial institutions must function in a setting where nominal variables like wages and interest rates do not quickly adjust to shifting economic conditions. This misalignment can lead to inefficiencies that impair the financial sector's capacity to promote stability and economic progress, such as improper credit allocation or excessive leverage (Blanchard & Fischer, 1989).

The outcome of expectations on economic behavior is a very important component in Neo-Keynesian theories. For instance, inflation expectations may become self-fulfilling. Businesses and people may preemptively affect negatively pricing and salaries if they expect inflation to rise, which would increase inflationary pressures. Such assumptions have the potential to impact asset price, investment strategies, and borrowing and lending behavior in financial markets, resulting in volatility and elevated systemic risks (Woodford, 2003)

The consequences of Neo-Keynesian findings are especially pertinent in developing economies with less developed financial markets, such as Ethiopia. In environments with weaker institutional structures and lower credibility for monetary policy, price stickiness and inflation expectations may be exacerbated. For example, the financial sector may become unstable if the central bank fails to communicate clearly and effectively, which could raise inflation expectations. A strong monetary policy framework that takes expectations and market imperfections into account is necessary to address these issues (Mishkin, 2007).

To minimize inflation expectations and lessen financial instability, neo-Keynesian models also stress he significance of credible policy actions. In order to improve market efficiency, Ethiopia must improve financial sector regulations, increase competition in the banking industry, and fortify monetary policy tools. By combating behavioral and structural inflexibilities, policymakers can lessen inflation-driven distortions and encourage a more robust financial sector that can sustain long-term economic growth.

2.2.6 Endogenous growth theory

A strong base for accommodating the connection between inflation and the growth of the financial sector is offered by endogenous growth theory, which explain the vital importance of internal economic forces like innovation, human capital, and knowledge spillovers (Aghion & Howitt, 1992). By attributing long-term economic growth to internal economic factors like institutional development and policy measures rather than external forces, this theory differ from exogenous growth models. According to this concept, inflation has a major impact on how the environment is shaped for investment, savings, and technical advancement all of which are essential for a healthy financial sector.

A continuous macroeconomic problem, high inflation can reduce the real returns on deposits and other financial instruments, which might affect negatively saving. This decrease the amount of money free for profitable investments by letting down people and organizations from saving. According to Endogenous Growth Theory, technological improvement is a major force behind economic growth, and this departure in capital accumulation impedes it. Therefore, the financial sector finds it difficult to sustain its performance and stability in the face of inflationary pressures since it depends on the effective mobilization and distribution of funds to finance investment (Romer, 1990).

The spread of resources across different sectors is also jeopardize by inflation, which very often causes investment to change from productive entities to inflation-resistant assets like gold, real estate, or foreign currencies. The efficiency of the financial sector is depleted by this kind of mismanagement, as is its capacity to support creative that propel sustained expansion. Due to weaker institutional frameworks and undeveloped financial markets, these distortions are especially troublesome in developing economies like Ethiopia, where inflation has a negative impact on the growth of the financial sector (Barro, 1995).

In addition to the above, by raising transaction costs and undermining the legitimacy of monetary and financial institutions, inflationary circumstances can lessen the stability of the financial sector.ambigiuties brought on by persistent or erratic inflation discourages both foreign and domestic investors. This kill trust limits financial institutions' capacity to support growth by lowering faith in them as well as the availability of money for financial markets. Inflation can increase these exposures and impede the growth of strong financial systems in nations with low levels of financial literacy and regulatory supervision (Aghion et al., 2005).

Policymakers must implement measures to manage inflation and promote the growth of the financial sector in order to lessen these difficulties. Important steps include supporting investments in industries driven by innovation, boosting savings through financial product incentives, and fortifying the monetary policy framework to maintain price stability. Resilience against inflationary shocks can also be increased by strengthening the financial markets' institutional capabilities and encouraging openness in central bank operations. The tenets of Endogenous Growth Theory, which emphasize the significance of internal economic mechanisms in attaining sustainable financial sector growth and development, are in line with these initiatives.

2.2.7 Expectations-Augmented Phillips Curve

Very interestingly higher inflation may temporarily lower unemployment rates in an economy, based on to the Phillips Curve, which first explained an inverse link between inflation and unemployment. However, by adding inflation expectations, economists like Milton Friedman and Edmund Phelps expanded this model in the late 1960s with the Expectations-Augmented Phillips Curve. According to Friedman (1968) and Phelps (1967), this adjustment recognize that

people and firms make projection about future inflation that affect their present economic decisions, including pay negotiations and price-setting practices.

Especially in recent economies, inflation expectations are crucial in determining actual inflation levels. Effective price discovery, fast and reliable information, and efficient capital allocation are all made possible by healthy financial markets, which greatly impact these expectations. In this situation, the financial industry serves as a channel for communicating monetary policy directives to the general public, guaranteeing that inflation expectations basically related with central bank objectives. For example, a central bank that is transparent and credible and has the backing of strong financial institutions helps stabilize inflation expectations and lessen price and wage volatility (Blanchard, 2017).

The information that is disseminated through asset prices, bond yields, and interest rates assists people and businesses in developing reasonable expectations of future inflation in economies with sophisticated financial markets. This trend reduces unanticipated price and wage shocks, improving economic stability. On the other hand, inadequate institutional frameworks and a lack of trustworthy information can result in misplaced expectations in less developed financial systems, which can exacerbate inflationary pressures and skew investment choices. The financial sector's capacity to efficiently promote economic growth may be hampered by such distortions (Mishkin, 1997).

Additionally, the Expectations-Augmented Phillips Curve emphasizes how crucial central bank credibility is in shaping expectations. Public confidence can be increased by a recognized central bank that regularly put public its goals for monetary policy. This will guarantee that inflation expectations are firmly anchored, especially in the face of transient shocks. For example, the National Bank of Ethiopia (NBE) might increase the efficacy of its policies in Ethiopia, where financial markets are still in their lower position in terms of development, by making its monetary policy framework more transparent and predictable. In addition to stabilizing inflation expectations, this would increase trust in the financial sector and support its growth (Getachew & Befekadu, 2021).

All things considered, the Expectations-Augmented Phillips Curve emphasizes how closely related inflation, unemployment, and the evolution of the financial markets are. Policymakers can successfully control inflation expectations by promoting healthy financial markets and

upholding central bank credibility, which supports macroeconomic stability and the long-term expansion of the financial industry. This theory is extremely pertinent to comprehending the dynamics of inflation and the growth of the financial sector since it emphasizes the strategic role that information transmission, institutional quality, and policy credibility have in determining economic outcomes.

2.2.8 Proxies of Performance for Financial Sector Development

In this sub topic detailed and extended description of different types of proxies that manifest performance of financial sector development will be described.

2.2.8.1 Credit to the Private Sector

The amount of credit distributed to the private sector based on theoretical models is one of the key indicator of the financial system's ability to direct capital toward beneficial endeavors. The macroeconomic environment, in particular inflation and economic stability, affects the accessibility of credit. Since high inflation creates uncertainty and warps the true value of money, both lenders and borrowers are affected. Calm macroeconomic conditions lower risk related uncertainties, allowing banks to fully extend credit, based on financial intermediation theory (Diamond & Dybvig, 1983).as stated by (Barro, 1991). Economic growth theories also reveal that when enterprises and individuals look for financing for investment and consumption, credit demand rises during times of extension. Due to this, macroeconomic stability and the overall growth improvement of the economy are linked to the banking sector's potential to provide credit.

2.2.8.2 Bank Assets to GDP

The bank assets to GDP ratio shows how efficient the banking sector capable of mobilizing funds and distribute resources, it is also considered as a gauge of financial depth. Based on a theory, a well-developed financial system that can support more investments and offer a greater volume of credit is expressed by higher bank assets as a percentage of GDP (McKinnon, 1973). The criteria’s required for the growth of bank assets are given by macroeconomic balance, which is defined by reduced inflation and sustained economic growth. The ability of banks to increase their asset base is highly affected by inflation, which reduce the real value of financial assets (Friedman & Schwartz, 1963). Based on the theories of financial development, stated by Levine an economy which grows more faster encourages lending and investment, in the same way it

increases the size of the banking industry in relation to the nation's production volume or GDP (Levine, 1997).

2.2.8.3 Bank Nonperforming Loans to Total Gross Loans

Bank non-performing loan is one of the most important theoretical measure of the health financial sector. Based on literatures on risk management on bank low inflation and sustainable growth very good to reduce loan default by protecting the real income of borrowers (Stiglitz & Weiss, 1981).in other way when inflation increases tremendously it trigger default and eliminate the power of the real income which resulted NPLs.

As stated by (Allen & Gale, 2000) NPLs only effectively controlled by prudent regulatory system and accommodating the lending practice suitable for borrowers which means that the supervision must be tight periodic and lenders should be responsible for their action.

2.2.8.4 Return on Assets (ROA, %)

By clear definition the ability or bank's effectiveness in making money out of its assets is return on assets, or ROA. According to theory of financial intermediation states banks are more likely to turn a profit in macro economically smooth settings where they can smartly manage their assets, lower costs, and reduce risks (Merton, 1995). Banks earn from larger demand for loans and investments during periods of economic boom. Inversely, unstable or inflationary times reduce profitability since they make it difficult to manage risk and increase expenses (Modigliani & Miller, 1958). As a result, the bank's internal management working process and external economic elements both influence ROA.

2.2.8.5 Return on Equity (ROE, %)

Another very important metrics for profitability of financial sector is how it uses its equity to produce profit out it which is called return on equity (ROE). According to (Jensen & Meckling, 1976), banks can increase their advantage of equity by stopping expansion chances when the economy is stable. Improvement in the economy makes it possible for banks to expand their lending and investment operations, increasing shareholder returns. In addition, internal bank activities that have a prominent impact on ROE include asset quality and capital adequacy. Good

management techniques that hold capital buffers and high-quality assets improve a bank's profitability, which raises ROE according to (Modigliani & Miller, 1958). In their work Allen & Gale, 2000) stated that higher profit on equity are by banks operating effectively and with a reliable capital structure, both of which are made possible by the regulatory body.

2.2.8.6 Interest Rate Spread (lending rate minus deposit rate, %)

The interest rate spread is one significant theoretical measure of the effectiveness of financial intermediation, which is highly impacted by variables like inflation, monetary policy, and market competitiveness, represents the difference between the cost of borrowing and the return on deposits. As explained by (Friedman, 1968) deposit rates might not increase equally because of regulatory measures or a lack of competitiveness, increased inflation usually related with higher lending rates as banks suspect to make up for the loss of real value in money. A more vibrant banking sector will dramatically decrease the interest rate spread, as the theories of financial market competition, as banks decrease lending rates and adjust to increase deposit rates to draw clients (Diamond, 1984).consequently, the interest rate spread can clearly show the level of competition in the banking industry as well as macroeconomic wellbeing.

2.2.8.7 Stock Market Capitalization

Stock market capitalization is one of the most interesting indicator of capital markets characteristics. As it was explained in theoretical analysis by (Bekaert & Harvey, 1997). Higher stock market capitalization is always found from calm economic conditions that is manifested by sustainable growth and reduced inflation. Here the factors also give a suitable investment environment. Improving investor trust and increasing market participation also relied on regulatory works which highly provide investor safety, transparency, and market integrity (La Porta et al., 1997).consequently, he relationship between all good things clearly reflected in stock market capitalization.

2.2.8.8 Broad Money (M2) to GDP (%)

Depth and liquidity of the financial system is clearly indicated by the broad money to GDP ratio. An increment in broad money as a percentage of GDP imply a more available and liquid financial system, based on theories of money supply and economic development (McKinnon, 1973). By impacting the money supply with interest rates and other instruments, monetary policy has a visible impact on the M2 to GDP ratio. By minimizing interest rates and increasing the money supply, expansionary monetary policies can improve credit growth and economic activity, which will raise the M2 to GDP ratio (Friedman & Schwartz, 1963). On the other hand, times of economic degradation or restrictive monetary policy may hinder the improvement of financial intermediation and decrease the amount of money available.

2.2.8.9 Commercial Bank Branches per 100,000 Adults

Commercial bank branches per population is very good indicator of financial inclusion according to theories of financial inclusion (Beck, Demirguc-Kunt, & Levine, 2007). More branches means more financial service especially when it is on unserved areas. The demand for banking services is initiated by modernization, economic expansion, and technological advancements, which in turn initiate banks to add new their branch networks. Access to banking services is also improved by regulatory measures purposely to advance financial inclusion, like opening of branches in underserved or rural areas. Due to this, the number of commercial bank branches shows both economic growth and legislative initiatives to keep safe that financial services are accessible to all societal groups.

2.2.8.10 Automated Teller Machines (ATMs) per 100,000 Adults

ATM density is one of indicator of financial accesebility.spread of ATM especially in rural and underserved areas make a lot difference. According to theoretical models like (Allen et al., 2016). Financial inclusion, expanding ATMs improve financial availability by reduction transaction costs and expanding banking convenience. Suitable legislative frameworks and technological improvements are essential for enabling ATM spread and enhancing the general agility of financial service delivery. Therefore, ATM density play as a stand-in for how good financial institutions can fulfill consumer demand for easily available banking services.

2.2.8.11 Account Ownership at a Financial Institution or with a Mobile-Money-Service Provider

One theoretical measure of economic and financial inclusion is the rate of account ownership. According to theoretical frameworks on financial inclusion, one of the main factors affecting economic improvement is being able to formal financial system (Morduch, 1999). The likelihood that people own formal accounts is dependent on by a number of factors, including income levels, literacy, and technological advancements. The way to financial services has been additionally increased by the growth of E- money, especially in areas with low modern banking infrastructure (Suri & Jack, 2016).

2.2.9 Factors affecting financial sector development

2.2.9.1 Macroeconomic stability

As it was stated McKinnon (1973) Macroeconomic stability is important for maintaining a healthy financial system, according to theories on financial development. Macroeconomic stability, especially reduced inflation and sustainable economic development, create a climate that is viable to the success of financial institutions. For example, inflation degrade the value of money, hindering long-term loans and investments and making it more difficult for the financial sector to better mobilize and allocate resources. In opposite to this, sustainable growth and low inflation reduce uncertainty, which in turn empower banks to expand and lend, hence giving a boost to financial intermediation (Friedman & Schwartz, 1963). Keeping in mind the above, macroeconomic sustainability is seen as a crucial precondition for long-term financial growth (Levine, 1997).

2.2.9.2 Inflation

Among all factors inflation is crucial for affecting different parts of financial sector in many ways .based on (Tobin, 1965).it degrade the actual power of money and lead to discouraging investors to invest. Due to this financial institutions want more accommodation for the capital lost, increased inflation boost interest rates and lead borrowing more far from the market. The availability of credit may be reduced by this basics, especially for long-term investments. Inflation also has a lethal effect on savings and asset values, which deprive lenders and investors from participating in financial activities (Friedman, 1968).as it was stated theoretically (Mishkin, 2001).sustainable price follow up and some accommodation for smoothing the way to create confidence on participants of the financial sector is vital to efficiently allocate resources.

2.2.9.3 Legal and Regulatory Framework

Another important element impacting financial development is a robust legal and regulatory environment. The successful operation of financial markets depends on clearly defined property rights, efficient contract enforcement, and strong regulatory institutions, claim La Porta et al. (1997). According to financial development theory, the ability of financial markets to effectively allocate resources and manage risk is based on the caliber of financial institutions, especially regulatory agencies. According to Beck et al. (2005), a stable legal and regulatory framework promotes investor trust, lowers transaction costs, and guarantees that financial institutions run effectively and transparently, all of which support the growth of the financial market. Effective legal frameworks help to reduce the risks involved in borrowing and lending, which otherwise could impede the movement of capital.

2.2.9.4 Financial Innovation and Technology

In many theoretical literatures it has been expressed how it is important for a financial sector to novation and technology to survive and standout. Based on the theory of financial inclusion By (Morduch, 1999), technical improvement like the start of digital payment systems and mobile banking by large accommodate financial access, especially in underserved areas. By making banking services more accessible, these inventions reduce transaction costs, increase financial services ‘quality, and promote financial accessibility.in addition to this, technological improvements like internet related platforms and automated teller machines (ATMs) enable to give service for large portion of the customer (Allen et al., 2016). Based on financial development theory advancing technical issues on the financial sector play critically to boost the development of the financial sector.

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2.2.9.5 Market Structure and Competition

The overall performance and quality of the financial market depend on the market structure and competitiveness among the actors. , according to financial development theory. Diamond (1984) explained that by reducing costs and improving resource distribution, competitiveness among financial institutions result more reliable financial intermediation. A competitive banking industry secure more effective credit allocation, boosting the amount of capital available for the market. Based on the market structure theories like of Stiglitz and Weiss (1981), banks are more adjusted to give profitable loan conditions when financial markets very alert, which support

investment and economic development. But, by limiting smaller businesses' and individuals' access to financial services, a tremendous power concentrated on a limited number of major institutions can result competition and financial development.

2.2.9.6 Financial Inclusion

Avery well and good financial service support economic growth this is manifested by ease of accessibility and free and available to all groups of the society which is expressed by financial inclusion .this metrics by itself helps a lot to judge the performance of the financial sector as if it has its own strong contribution for the development.it includes the formal financial service which allows to save and invest as it was explained by (Morduch, 1999).

The elongation of financial services to unseen people, especially in rural or low-income areas, is directly related to financial wellbeing of the nation. As it was supported by literatures like (Suri & Jack, 2016) prominent tools for increasing financial inclusion which in turn resulted economic growth and reduce poverty are also mobile money, microfinance organizations, and community-based banking services. Based to theories of inclusive growth, expanding access to financial services promotes the efficient allocation of resources within an economy and results in more equal economic development.

2.2.9.7 Human Capital Development

As it is very well known it is highly trained educated and competent peoples are engaged in financial sector, due to this highly trained employees are very crucial for the development of the financial sector since it is very complicated and very sensitive to disrupt for little mistakes. Human capital theory (Becker, 1964) explained that financial development and economic development are seriously influenced by the dimension of human capital. If it is with higher levels of education are more likely to comprehend and use financial goods, which increases the efficiency of financial services in improve economic activity. In addition to this, the smooth operation and growth of financial markets depend on the presence of competent personnel in the financial industry, this considers regulators, bankers and financial analysts. That support the expansion of the financial sector and improves the effectiveness of financial intermediation.

2.2.9.8 Literacy

Based on the financial literacy theories, one of the critical factor affecting financial sector development is financial literacy the one who has basic understanding of how to save, budget and invest make decisions than any other illiterate (Lusardi & Mitchell, 2014) all services regarding the financial sector seek peoples who are financially literate somehow to do financial decision. Because financially literate people are aware of risk and return when they participate on the service having this in mind, it is presented by (Atkinson & Messy, 2012). That improving financial literacy will lead to an improved financial decision-making, boost market involvement, and a vibrant financial system as a whole.

2.2.9.8 Institutional Quality

In this very dynamic sector the qualities of institutions with respect to robustness and effectiveness is very essential for development of the financial sector, especially government regulatory institutions are very prominent as it was explained by North (1990).By reducing transaction costs, improving more confidence among market participants, and keeping safe the execution of contracts and property rights, institutions which are defined by openness, accountability, and effective governance support the smooth operation of financial markets. Financial markets are likely to fail and exposed to resource misallocation when institutions are weak. Based to theoretical models, (Acemoglu et al., 2001).strong institutions support investment, make a foundation for trust in the financial system, and push long-term financial growth.

2.2.9.10 Government Policies and Monetary Stability

Government policies directives and procedures has a lot serious impact on the financial sector development especially those of related with taxation and related legal aspects affect the sector a lot more.as explained by monetary theory (Friedman, 1968) clearly explained that efficient monetary policy that lower inflation and stable exchange rate are crucial for financial stability. Very high inflation reduce the value of money, discourage investment and saving, and makes financial institutions more sinking. In opposite to this, steady interest rates and inflation foster an atmosphere that allows banks to lend and invest more confidently, which supports the growth of the financial industry.in addition to this, financial liberalization entertaining government policies

like deregulation and privatization can boost financial market quality, promote competitiveness , and broaden access to financial services (McKinnon, 1973).

2.2.9.11 Globalization and International Capital Flows

Nowadays globalization through its efficient technological applications it make easier to capital to move across borders easily due to this it has significant effect on financial sector development. As it was stated by the theories of international finance (Obstfeld & Rogoff, 1996). Countries are be able to dump large-scale investments and overcome imbalance in domestic savings thanks to the availability of capital from abroad. But there are drawbacks related with globalization as well, especially when it comes to bad cash flows that have potential risk for financial institutions. According to certain theories, financial interconnection can speed up the expansion of the financial sector, however, in order to reduce the risks related with cross-border capital flows, it must be well managed and monitored (Prasad et al., 2003).

2.3 Empirical literature review

This section presents reviews of empirical evidence on the financial sector development and effect of inflation that are recently conducted. The researcher classified the results of updated empirical studies on this subject in two subsections, namely: international studies and Ethiopian studies, and presented as follows.

2.3.1 International studies

On their study Ahmed and Suliman (2011) used time series data from 1970 to 2005 to interpret the effect of inflation on Sudan's financial development. It analyzed the relationship between inflation and financial development indicators, such as broad money supply (M2) and private sector credit, using an Autoregressive Distributed Lag (ARDL) approach. The output reflected that inflation had a major lethal effect on financial improvement, especially by the time when inflation was critically high. To promote a robust financial sector in developing nations like Sudan, the study stressed the importance of smooth inflation rates.

Awang and Mojtahedzadeh (2015) explained in their work on at how Malaysian banks' financial performance was threatened by inflation between 2000 and 2013. The study used Return on Assets (ROA) as main indicator of performance that was prepared using panel regression

analysis. Finally the findings reflected that inflation has a negative impact on ROA during the study period, stressing that banks profitability is in danger of high inflation. The study boldly stated that vibrant monetary policy is a must to minimize the lethal effect of inflation on a banking performance.

Ahmed and Bashir (2018) including South Asian economies in the time span from 1995 to 2015studied the macroeconomic factors of financial situation. Considering inflation as a key independent variable and ROA used to count the performance of banks. In Their result they concluded that a clear negative relationship between inflation and ROA especially during times of lethal inflation.

Hossain and Saif (2016) based on the study they showed the relationship between inflation and bank profitability in Bangladesh was explained using data from 1980 to 2014. The study used ROA as the dependent variable in line with ARDL approach to detect short-term and long-term effects. Inflation was found to have a critical negative impact on ROA, with the effect being more triggered in the long term. The researchers recommended policy decisions to discourage inflation for consistent bank performance.

In their study **Naceur and Kandil (2009)** made analysis on the effect of inflation on financial sector performance in the MENA region. Using ROA as a measure of bank performance, the study applied a dynamic panel data model to data from 1980 to 2006. The findings exposed that inflation severely impacts ROA by killing the real value of assets and increasing the costs of operations. The study stressed the need for monetary sustainability to protect the financial sector's profitability.

Chowdhury and Islam (2020) the study stated that the effects of macroeconomic variables, including inflation, on the financial performance of commercial banks in Pakistan from 2000 to 2018. ROA was used as the dependent variable, and the study used a fixed-effects model. The outcomes showed that inflation had a clear negative relationship with ROA, concluding that increasing inflation reduce bank profitability by increasing operation costs and reducing net interest margins.

On their study carried out in Kenya **Kariuki and Muturi (2016)** analyzed the impact of inflation on financial performance between 2005 and 2015. Using ROA as the dependent variable, the study used a panel data analysis technique. Inflation was found to have a negative effect on

ROA, with the researchers attributing this to higher input costs and low demand for loans. The study called for strong monetary policies to adjust inflation and improve bank performance.

Berger and Mester (2017) in a cross border examination of financial institutions across Europe stated that, this study revealed the impact of macroeconomic variables, including inflation, on bank performance from 1990 to 2015.here ROA served as the dependent variable, and the study employed GMM estimation techniques. The results showed that inflation significantly lower ROA by elevating the costs associated with credit increment and lowering net interest income.

Using Auto-Regressive Distributed Lag (ARDL) bound testing approach **Khaled Batayneh et al. (2021)** examined that effects of inflation on Jordan's banking industry from 1993 to 2018. Based on the study, economic growth has a beneficial effect on the improvement of the financial sector, however inflation has a negative impact on the long term. To reduce the effects, policies that maintain financial stability are most important.

Usman (2019) used instrumental variables in a panel analysis that covered 44 African countries and explain the connection between inflation and the development of the financial industry. Despite the metrics (e.g., broad money to GDP, lending to the private sector), the study found that inflation negatively affect financial development.

Bittencourt (2011) explained the impact of inflation on financial development in ten regions from 1985 to 2002 with focus on Brazil. With sustainable results through a range of financial variables, the study's data showed that inflation is harmful to the expansion of the financial sector.

Abbey (2012) used updated econometric models like NLLS, ARDL, and VAR to state the relationship between inflation and financial development in Ghana over a 20-year period. The results focused threshold effects, which show that financial development is clearly harmed by inflation levels above 16%. The effects are milder below this threshold.

Kim and Lin (2010) Using Pesaran and Shin's approach by a panel of 87 countries spanning 47 years to study the effect of inflation on financial development. The findings state that although there may be short-term boost in market activity, high inflation has a long-term lethal impact on financial systems.

Sehrawat and Giri (2015) used yearly data from 1971 to 2011 to examine how inflation affected India's financial development. The study reveal the relationship between inflation and financial development manifestations including financial depth and private sector credit using

the ARDL bounds testing method. The study found the importance of inflation related for long-term financial development by explaining that inflation has a lethal long-term effect on financial development.

Using data from 140 nations between 1960 and 1999, **Khan, Senhadji, and Smith (2006)** empirically investigated the threshold impacts of inflation on financial development. They found that inflation greater than 5% has a lethal effect on financial development, especially in developing nations, using a dynamic panel threshold regression technique. Based on to the report, in order to maintain strong financial sector performance, regulatory bodies should work for inflation rates below this threshold.

Rousseau and Wachtel (2002) take data from 84 countries over the years 1960–1995 to explain how inflation impacted the development of the financial sector. They focused on important financial development performance measures including private credit and liquid liabilities using panel regression techniques. According to their findings, financial progress is highly hampered by inflation above a cut off of 8%. The report focused how crucial it is to keep inflation low in order to promote financial depth and overall economic expansion.

Using data from both developed and third world countries, **Huybens and Smith (1999)** analyzed the theoretical and empirical connections between financial market activity and inflation. Based on their analysis, inflation disrupt credit markets and lowers investment, which have a detrimental impact on financial intermediation. They also showed how vital inflation thresholds are, showing that when inflation increase above 15-20%, financial progress severely declines. The study placed a strong focus on how monetary sustainability promotes the effectiveness of financial markets.

In their study **Boyd, Levine, and Smith (2001)** used panel data for the year 1960 to 1995 to analyze the relation between inflation and the performance of the banking industry in 100 nations. Using the generalized method of moments (GMM) method they estimated the impact of inflation on metrics of financial depth such stock market capitalization and private credit. The study a nonlinear link, with high inflation rates critically undermining financial development and moderate inflation levels having a little effect. The research made clear how critical it is to hamper inflation in order to support the expansion of the banking industry.

Using panel data from 1980 to 2010, **Kepsa and Keho (2015)** explained the relation between inflation and financial development in countries which are part of the West African Economic

and Monetary Union (WAEMU). The study found that financial development is severely impacted by inflation, with the effect being more noticeable in nations with high inflation using the ARDL bounds testing approach.

From data from 11 nations between 1983 and 2002, **Naceur and Ghazouani (2007)** explained between inflation and the growth of the financial sector in the MENA region. By using dynamic panel models and fixed factors, they found a large negative relation, outlining the significant impact to financial intermediation posed by inflation thresholds over 10%.

In their research **Luintel and Khan (1999)** used multivariate cointegration method to explain financial development and inflation in ten Asian countries. The result found that the two-way negative causal relationship between inflation and financial development, pointing that even though weak financial systems trigger inflationary pressures, inflation reduces the development of financial systems.

Using panel data from 1980 to 2008, **Espinoza, Leon, and Prasad (2010)** analyzed inflation cut off point for the growth of the financial sector in GCC nations. The result, which were based on threshold regression models, showed that financial development measures like private sector lending and banking sector quality are adversely affected by inflation when it appears above 5%.

By ARDL cointegration**, Ang and McKibbin (2007**) showed that the long-term relation between inflation and financial development in Malaysiain in the year between 1960 and 2001. Based on the paper, the quality and efficiency of the financial sector are highly degraded by high inflation rates, with the outcomes being especially noticeable at the times of macroeconomic shock.

Odhiambo (2009) used time-series data from 1980 to 2006 to express inflation and financial development in Sub-Saharan African countries. The study explained a unidirectional negative cause and effect relationship between inflation and financial development across the limits testing method to cointegration.

Rousseau and Wachtel (2011) studied the inflation-financial development correlation using data from over 100 countries including years from 1960 to 2007. That discovered there is a threshold effect to inflation, with notable bad effects happening over 8%. The policy insights for controlling inflation in emerging economies were marked by their findings.

From 1990 to 2015, Bashir and Bin Zhao (2016) stated how inflation impacted the financial development of emerging Asian markets. The study discovered, using GMM estimate

methodologies, that inflation significantly lowers the availability of private sector credit and the quality of the banking sector.

Using a dynamic panel approach, Beck and Levine (2004) investigated the relation between inflation and financial intermediation across nations. Relaying on the study, financial depth, loan availability, and financial market operation are all adversely affected by inflation, with the impact being seen noticeably in emerging nations.

From 1870 to 1995, Bordo and Wheelock (1998) examined the historical connection between inflation and financial development in the US. They found, using historical time-series data, that low credit market activity and crack financial stability were linked to high inflationary eras.

Using panel data from 1995 to 2012, Caporale and Helmi (2014) expressed how inflation impacted the development of the financial sector in CEE nations. The study, which used panel cointegration methods, discovered that high inflation, especially in post-transition nations, clearly impedes financial development. The study underlined how important monetary stability is to the expansion of the region's financial industry.

Bojanic (2012) used panel data from 1990 to 2010 to examine inflation and financial development in EU nations. Using a dynamic panel model, the study examined a threshold effect, when inflation rates higher than 3% had a negative impact on financial sector metrics like bank efficiency and credit to GDP. Inflation targeting was recommended by the study as a crucial financial development policy.

The impact of inflation on the growth of financial intermediation in European transition economies between 1994 and 2001 was examined by Fries and Taci (2005). They found that high inflation reduce the efficiency of the banking sector and loan distribution by using data on bank performance and inflation. The effect of macroeconomic sustainability for transition economies was focused in the study.

Using panel data from 1960 to 1998, Khan and Senhadji (2001) examined inflation thresholds in developed economies, including those in Europe. Their results showed that when inflation increases above a threshold of 2% for advanced economies, it has a lethal effect on financial development.

Egert, Backé, and Zumer (2007) examined how inflation affected the spread of the banking industry in developing European nations between 1995 and 2006. They discovered, using GMM

estimators, that inflation lower the growth of financial markets, especially in those nations with erratic monetary policies.

Arpaia and Mourre (2009) studied the impact of inflation on Eurozone lending markets between 1990 and 2007. Using panel VAR models, they concluded that inflation radically reduce financial market depth and credit allocation efficiency.

De Haan, Sturm, and Van Dijk (2007) used time-series data from 1970 to 2005 to study the relation between inflation and financial development in the EU. By cointegration, their analysis discovered that inflation for long time lowers financial sector performance metrics like stock market liquidity and banking sector efficiency.

Beck, Demirgüç-Kunt, and Levine (2006) used panel data from 1975 to 2000 to examine how inflation impacted financial development in Weste rn Europe. The study clearly stated, using GMM methodologies, that inflation highly lowers banking sector quality and financial depth.

Fidrmuc and Korhonen (2006) investigated how inflation affected financial integration in nations that were part of the European Monetary Union (EMU). The study touches, through the use of dynamic panel regressions that inflation reduce international financial transactions and decreases the efficiency of monetary policy adoption.

Bulgarelli and Chiades (2007) examined how inflation impacted the execution of Italy's banking industry between 1980 and 2004. They found, using an ARDL technique, that during times of high inflation, inflation has a lethal effect on loan markets and reduce deposit mobilization.

Rizov (2015) investigated how inflation impacted the sustainability of financial markets in Eastern European nations between 1990 and 2013. The study, which used dynamic panel regressions, found that inflation lower stock market depth and banking sector efficiency by interfering with financial intermediation. In order to adopt strong financial institutions in transition economies, the study focused on the importance of controlling inflation.

Mehl and Winkler (2003) examined the banking industry while examining inflation and financial development in Central and Eastern Europe. The study, which used structural equation modeling, discovered that inflation has a detrimental effect on loan quality and credit allocation, especially in nations going through fast economic transformations.

The impact of inflation on the effectiveness of the financial sector in European transition economies was examined by Égert and MacDonald (2006). They discovered through panel

cointegration analysis that inflation lowers the total amount of credit given to the private sector and destabilizes the banking industry.

The impact of inflation on financial development in the Visegrad Group (Czech Republic, Hungary, Poland, and Slovakia) was examined by Borsic and Hajek (2009). They came to the conclusion that inflation considerably slows bank lending expansion and financial depth in these economies using panel data and fixed effects models.

The impact of inflation on the reform of the banking industry in Central and Eastern Europe was examined by Bonin and Wachtel (2003). The study demonstrated, using data from 1990 to 2001, that inflation has a detrimental effect on the depth of the financial sector and jeopardizes the effectiveness of banking reform.

Mileva (2008) investigated how inflation affected the growth of financial markets and foreign direct investment (FDI) in rising European nations. Using vector auto regression (VAR) models, the study came to the conclusion that inflation deters foreign direct investment (FDI) inflows, which slows the growth of the capital market.

Smith and Huybens (1999) this study utilized European data in its examination of inflation and financial market performance, although it was not only focused on Europe. The study used both theoretical and empirical methods to show that, especially in European nations with ongoing inflation problems, excessive inflation lowers financial intermediation by increasing transaction costs.

Schnabl and De Grauwe (2008) this study evaluated the effect of inflation on the financial stability of nations that are members of the European Monetary Union (EMU). It found that inflation volatility raises systemic risks and decreases financial market integration using time-series data from 1995 to 2006.

Miller, Cukierman, and Neyapti (2002) the effect of inflation on banking and financial systems in emerging European markets was evaluated in this study. The study found that inflation makes financial inefficiencies worse in economies with lax regulatory frameworks, using institutional quality as a control.

2.3.2 Ethiopian studies

Wolde-Rufael (2008) examined the short- and long-term relationships between inflation and financial development using an error correction model and cointegration analysis. Based on time

series data from 1965 to 2003, his analysis came to the conclusion that inflation has a detrimental effect on financial development, namely on the expansion of financial intermediaries and the distribution of credit. According to him, maintaining inflation stability is essential to promoting Ethiopia's financial development.

Similarly, Mengesha and Holmes (2013) examined the connection between inflation and the growth of the financial industry from 1981 to 2011 using the Autoregressive Distributed Lag (ARDL) bounds testing approach. According to their findings, inflation eventually impedes financial intermediation, particularly when it comes to the distribution of credit to the private sector. According to the study's findings, measures that manage inflation are crucial to bolstering Ethiopia's financial development (Mengesha & Holmes, 2013).

In a related study, **Teshome (2015)** examined the performance of the banking industry and evaluated the impact of inflation on loan quality and deposit growth between 1990 and 2014 using panel data regression analysis. According to his research, inflation poses a serious challenge to the banking industry's performance, impairing commercial banks' capacity to efficiently manage deposits and make loans, particularly during times of high inflation. The study underlined how crucial inflation management is to raising the operational effectiveness of the banking industry.

Birhanu and Wondimagegnehu (2012) conducted another significant study that examined the dynamic relationship between inflation, financial intermediation, and economic development between 1974 and 2009 using a Vector Autoregressive (VAR) model. They discovered that banks' ability to direct funds into profitable investments is diminished by inflation, which has a detrimental effect on the effectiveness of financial intermediation. This finding lends credence to the idea that improved financial sector performance requires inflation stabilization (Birhanu & Wondimagegnehu, 2012).

Using panel data from 1980 to 2014, Abebe and Alemayehu (2016) used Generalized Method of Moments (GMM) estimators to examine how inflation affected financial development. Their results confirm that inflation has a detrimental impact on the financial sector, especially on the efficiency of the financial markets and the availability of credit for the private sector. They suggest that one of the most important policies for encouraging Ethiopia's financial industry to flourish sustainably is inflation stability (Abebe & Alemayehu, 2016).

Tekle (2017) conducted a study to explore the impact of inflation on financial sector development in Ethiopia using **time-series data from 1991 to 2016**. The study applied the **Autoregressive Distributed Lag (ARDL) approach** to assess the long-run and short-run effects of inflation on financial deepening indicators, such as credit access and financial intermediation. The findings revealed a **negative impact** of inflation on financial sector development, particularly in reducing credit access and hindering banking sector growth. The study concluded that **inflation control** through effective monetary policy is essential for fostering a more efficient financial sector in Ethiopia.

2.4 Conclusion and Research gap

The literature that is currently being published extensively examines the connection between inflation and the expansion of the financial sector, albeit primarily in industrialized and some emerging market countries. Ethiopia's institutional structure, policy environment, and economic makeup make it a unique background, yet not much research has been done specifically on the nation. Moreover, studies usually ignore the non-linear effects of inflation and how institutional quality affects this relationship. This discrepancy highlights the need for a careful analysis of how inflation affects the expansion of Ethiopia's financial sector while taking into account the nation's distinct institutional and economic structure.

2.5 conceptual framework

Here’s the diagram representation of the conceptual framework after reviewing different literatures the researcher came up with the following diagram.

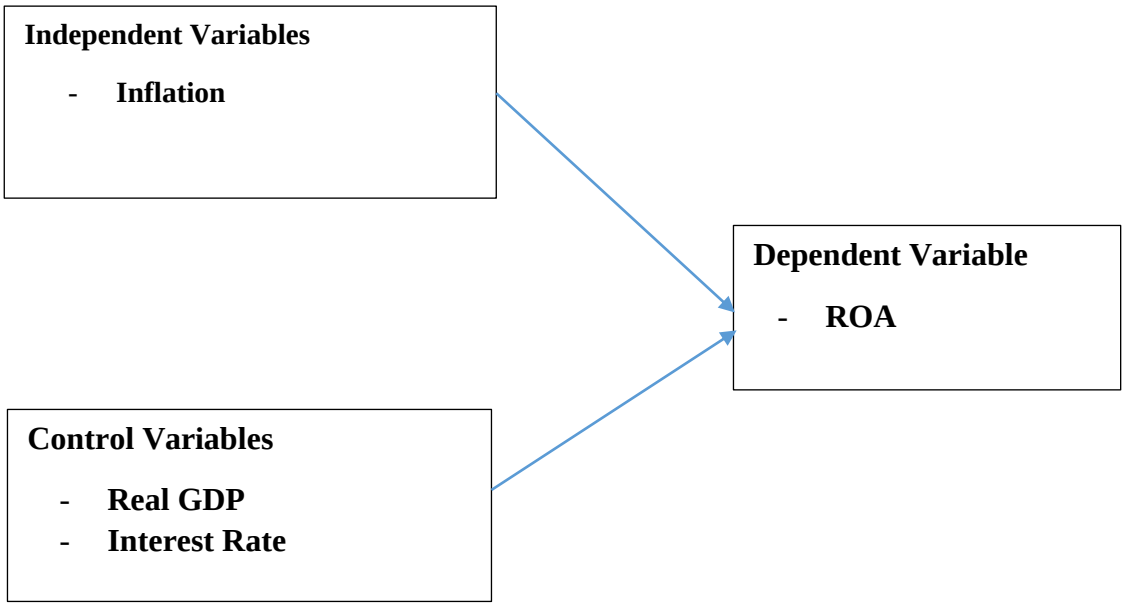

Figure 2.1 conceptual framework

Source: inflation and financial sector development literatures

CHAPTER THREE: RESERCH DESIGNE AND METHODOLOGY

3.1 Chapter Introduction

In order to examine the impact of inflation on the development of Ethiopia's financial sector, this chapter presents the research design and methodology

3.2 Research Approach

Quantitative approach is very often used by researchers to verify theories and establish hypothesis between dependent and independent variables as it was stated by Creswell (2003). The reliability of findings become very acceptable when it was grounded with empirical evidences, which primarily manifested quantitative research. So many times it was told that how quantitative research to study monetary policy and inflation was highly raised by Sargent and Wallace (1981).

In This study the researcher used pure quantitative approach as it utilized statistical procedures to relate and verify relation of variables. This study began with statement of the problem and following research questions and it has built hypotheses and reviewed literatures.

3.3 Research Design

It can be considered as a compass as it was stated by Kothari (2004) it is a tool which helps a researcher to find answer for it research questions. The explanatory research method is used in this study. Since it helps to explain the casual link between dependent and independent variables it is very suitable for this study.

Using explanatory research approach is appropriate by the time when examining how financial sector has developed in relation to inflation. Ascertaining and comprehending the causal linkages that exist between inflation and several characteristics of the performance of the financial sector, such as credit availability, banking efficiency, and financial market growth is primary objective of this approach. The study can show a deep examination of how inflation affects financial institutions and markets by utilizing explanatory research, which is vital for creating efficient policy interventions to support the stability and expansion of Ethiopia's financial sector.

Empirical studies used to support the application of explanatory research. Based on findings, from Boyd, Levine, and Smith (2001) higher inflation rates are related to less efficient banking systems and the growth of financial markets globally, this finding highlights the necessity for in-depth research to fully understand how inflation affects financial performance. As it was stated in the study, relationship between monetary policy and inflation was examined by Sargent and Wallace (1981), which emphasized the complexity of the subject and the significance of comprehending causality in economic relationships. Additionally, Roubini and Sala-i-Martin (1992) revealed in their study that the outcome of inflation-induced financial repression, highlighting the need for explanatory studies to find the complex relationships between inflation and the growth of the financial sector.

By looking into causality explanatory research method brings important views on how inflation affects market dynamics and institutional performance in Ethiopia. This is very helpful for policy makers who want to reduce the impact of inflation and build healthy finance industry.This information is essential for policymakers who want to put specific economic plans into place to lessen the negative effects of inflation and support a healthy finance industry.

3.4.2 Sample Design and Sample Selection

Throughout my analysis, I used data from 2000 to 2023 to study how Ethiopia's banking industry has developed in relation to inflation. This range of time was selected just because due to availability of reliable data for Ethiopian economy, unlike that of the cold war era in addition to this there is more relevance to the chosen topic. All financial sector statistics and Ethiopia's inflation rates during the designated period are included in the study's population. I have collected data from reliable sources like the World Bank, the International Monetary Fund (IMF), and the Ethiopian Central Bank using a secondary data approach due to the limitations on data availability. As it was seen by (Khan, 2012; Smith & Lee, 2017).Similar studies in the field, which frequently rely on secondary data to assure robustness and reliability, are in line with this methodology

In my study I used purposeful random sampling In order to create a comprehensive dataset that covers important economic trends and changes over a two-decade period, purposeful sampling was used. According to (Creswell, 2014; Saunders et al., 2016)This method works very well when understanding the rapid change of financial sector dynamics in relation to inflation

requires knowledge of certain time periods. Due to this the study undertaken banks with nine years of service life accordingly those banks having at least nine years of service life are Cooperative bank of oromiya,Awash Bank,Zemen Bank, Hibret Bank,Wegagen Bank, ,Debub Global Bank ,Abyssinia Bank, Lion Bank, Abay Bank, Addis international Bank, Buna Bank ,Dashen Bank,Enat Bank, Commercial Bank of Ethiopia, Nib bank, lion bank.

Accordingly the study used 24 years of data from 2000-2023 with sample of 16 commercial banks in Ethiopia with minimum of nine service year in the industry.

Levine and Zervos (1998) and Beck et al. (2000), supported the use of data spanning a considerable time period by their studies, which clearly explain the importance of long-term data analysis in economic activities. By examining a continuous 24 year period, this study aims to provide a detailed and nuanced understanding of how inflation impacts the financial sector's development in Ethiopia. Accordingly those banks with more than nine years of service

3.3 Data Source and Collection Method

Secondary data sources used by the researcher to attain the objective of the study. Data from the national bank of Ethiopia for 24 years were collected from 2000-2023 to study the relationship between effect of inflation in the development of financial sector in Ethiopia accordingly data from World Bank database used for inflation and GDP.

3.4 Variable Specification and Measurement

These variables are dependent and independent variable

3.4.1 Dependent variables

Return on Assets (ROA, %) this proxy has been used by many different literatures as indicator of financial sector performance such as Mojtahedzadeh and Awang (2015) Ahmed and Bashir (2018) Hossain and Saif (2016) Naceur and Kandil (2009) Chowdhury and Islam (2020) Kariuki and Muturi (2016) Berger and Mester (2017)

3.4.1 Independent variables

Inflation refers to the rate at which the general level of prices for goods and services rises, resulting in a decrease in the purchasing power of money. There are as many literatures which

used this proxy as independent variable on their studies Hossain and Saif (2016) ,Ahmed and Suliman (2011) ,Naceur and Kandil (2009) **,**Kariuki and Muturi (2016), Bittencourt (2011) ,Abbey (2012), Sehrawat and Giri (2015) ,Rousseau and Wachtel (2002), Boyd, Levine, and Smith (2001) ,Espinoza, Leon, and Prasad (2010) and Bashir and Bin Zhao (2016)

3.4.2 Control variables

Real GDP Real GDP (Gross Domestic Product) is the inflation-adjusted value of all goods and services produced in a country over a specific period, usually a year or a quarter. It is used to measure the economic performance of a country and to compare the economic output across different time periods or countries. This proxy has been used by many literature as control variable such as Espinoza, Leon, and Prasad (2010), Rousseau and Wachtel (2002), Sehrawat and Giri (2015), Bittencourt (2011), Kariuki and Muturi (2016), Naceur and Kandil (2009) and Hossain and Saif (2016)

Interest rate is the percentage charged or paid for the use of money, typically expressed as an annual percentage of the principal amount. It represents the cost of borrowing or the return on investment for lenders and This proxy has been used by many literature .Sehrawat and Giri (2015), Bittencourt (2011), Kariuki and Muturi (2016), Naceur and Kandil (2009) and Hossain and Saif (2016), Espinoza, Leon, and Prasad (2010), Rousseau and Wachtel (2002),

3.5 Model Specification and Analysis Techniques

Analysis Approach

The study applied regression **analysis** in this study to look into how Ethiopia's financial sector industry has developed in relation to inflation. With **inflation** acting as the main independent variable, the analysis will concentrate on important financial sector development indicator which is **return on assets (ROA).**In order to take into consideration their possible impact on the financial sector, control variables such as **GDP and interest rates will also be included**. I used STATA to analyze the data. I performed an exploratory data analysis (EDA) to determine the correlations between the variables, and then I used linier regression modeling to calculate the impact of inflation. The validity of the regression results have been verified by performing diagnostic tests, such as multicollinearity, heteroscedasticity, and residual normality tests.

Evaluation Strategy

Interpreting the regression coefficients, significance thresholds, and overall model fit (R-squared values) will be the main focuses of the data evaluation process. The findings will provide a more comprehensive picture of the relationship between inflation and the growth of Ethiopia's financial sector. Important discoveries will be interpreted in light of Ethiopia's larger economic backdrop, and the ramifications will be explored in terms of suggested policy measures. The reliability of the results will be ensured by doing robustness checks and acknowledging any potential limits, such as data constraints or model assumptions.

Model specification

$ROA=\beta 0+\beta 1INR+\beta 2GDP+\beta 3INR+c$

Where;

ROA =return on an asset

INR = inflation rate

GDP = real gross domestic product

INR= interest rate

Where, C=constant term, β Coefficient of variables from time 2000 to 2003.

Model Assumption Tests

The following are assumptions which serve as test for the model is really practically applying called CLRM check whether the assumptions are violated or not. These assumption are as follow.

No multicollinearity: there is no linear relation between independent variables

Normality: test implies disturbance term should be normally distributed or given the value of X given the disturbance term (ui) is zero.

Homoscedasticity: give for the disturbance term the disturbance term has to be the same for all observations.

No Autocorrelation: implies that the correlation between two disturbances terms zero in addition to these the study **Stationarity**: using Augmented Dicky Fuller test

CHAPTER FOUR: RESULT AND DISCUSSION

In this chapter the results from linier regression using STATA, by secondary data using classical regression model assumption will be presented as follow. In their order descriptive statistics first and go through classical regression assumption test, secondly the chapter deals with correlation and regression result interpretation, finally the chapter presented the collective analysis of the above topics such as descriptive correlation and regression results.

4.1 Descriptive Statistics Interpretation

This part of the chapter present descriptive statistics obtained from the regression as indicated from table 4.1 the summary contain both dependent and independent variables with their own mean, minimum, maximum and standard deviation.

Table 4.1summary descriptive statistics

variables	Obs	Mean	Std.dev	Minimun	Maximum
rgdp	**24**	**1213.25**	**707.18**	**390.103**	**2603.95**
aninf	**24**	**14.25**	**11.69**	**-10.8**	**36.4**
intrs	**24**	**7.27**	**0.56**	**6**	**8.25**
boa	**24**	**2.70**	**0.90**	**1.03**	**6.19**

Source: own computation by STATA

The real GDP, measured in billions, has a mean value of 1213.25 and a standard deviation of 707.12. This indicates that the deviation from the mean across the 24 observations exceeds 50%, reflecting significant fluctuations in GDP over the study period (2000-2023).The considerable gap between the minimum and maximum values additionally supports the existence of substantial volatility in economic output. The observations leads that the Ethiopian economy experienced considerable instability during the period under review, with wide disparities from the average indicating episodes of rapid expansion or contraction.

Regarding inflation, the mean annual inflation rate stands at 14.25%, with a standard deviation of 11.69%, this imply that a high degree of variability in the general price level across the years. The minimum value of -10.8% reflects a period of deflation, basically indicating economic contraction due to weak aggregate demand, possibly triggered by high price volatility. In another

way, the maximum inflation rate of 36.4% reveal periods of significant price surges, possibly driven by macroeconomic instability such as rapid currency depreciation, supply-side shocks, or inadequate monetary policy responses.

The interest rate spread, another key explanatory variable, has a mean of 7.27 and a low standard deviation of 0.56. This relatively small deviation from the mean indicates a stable interest rate environment over the observation period. The narrow range between the minimum and maximum values further supports the conclusion that interest rates were consistently maintained, reflecting a cautious and closely monitored monetary policy stance by the government or central monetary authority.

The statistics also include the return on assets (ROA) for banks, with a mean of 2.70 and a standard deviation of 0.90. This level of variation imply moderate performance disparities within Ethiopia's financial sector. In the meantime the standard deviation indicates a reasonable level of continuity, the range spanning from a minimum of 1.03 to a maximum of 6.19 clearly showed that some outperform others. The lowest ROA value suggests underperformance by some entities, whereas the highest indicates strong profitability among others. This wide performance gap may be related to differences in managerial efficiency, resource allocation, operational practices, or external market conditions. All in all , the data highlight an uneven distribution of financial success within the banking sector during the observed period.

4.2 Classical Linear Regression Model Assumption Test

The results tested by four diagnostic test of CLRM assumption to ensure whether classical assumption fitted or violated accordingly.

Empirical Model Estimation: As formulated in the methodology the model is as follow

$$ROA=\beta 0+\beta 1Inflation+\beta 2GDP+\beta 3Interest\ rate+c$$

Where;

ROA =return on an asset

infr = inflation rate

gdp = real gross domestic product

intr = interest rate

Where, C=constant term, β Coefficient of variables from time 2000 to 2003.

4.2.1 Normality Test

Normality test means it is simply navigating whether the data are well modelled by normal distribution or not .it is either graphical or non-graphical.

Table 4.2 Jarque-Bera test of normality

				joint	
variables	**obs**	**pr (skewness)**	**pr(kurtosis)**	**adj chi² (2)**	**Prob> chi²**
resid	**24**	**0.04**	**0.029**	**13.1**	**0.0531**
resid	**24**	**0.04**	**0.029**	**13.1**	**0.0531**

The results presented are from a Jarque-**Bera test** which analyze whether the residuals (errors) from my regression model are **normally distributed**, a key assumption in Classical Linear Regression Models (CLRM). The decision rule behind the skewness/kurtosis tests for normality states that if the p-value of the error term is greater at the chosen level of significance, ie 1%, 5%, 10%, it indicated normal distribution of error terms (Gujarati, 2004).The normality test of the residuals, conducted using 24 observations, yields the following statistics: the probability associated with skewness is 0.04, and for kurtosis, it is 0.029. The adjusted Chi-square statistic is 13.1, with a corresponding p-value of 0.0531.

These results suggest that the residuals slightly deviate from normality. Specifically, the p-values for skewness and kurtosis are both below the 0.05 significance level, indicating potential issues with symmetry and peakedness in the residual distribution. However, the overall p-value for the joint test (Prob > chi² = 0.0531) is slightly above the conventional 5% threshold, suggesting that we fail to reject the null hypothesis of normality at the 5% level, although marginally.

In summary, while there is mild evidence of non-normality particularly in terms of skewness and kurtosis general joint test result showed that the residuals are approximately normally distributed, and the assumption of normality is not severely violated. Nonetheless, the closeness of the p-value to the 5% threshold suggests that caution should be exercised, and if needed,

further robustness checks or alternative estimators that do not rely heavily on the normality assumption could be considered

Graphical normality test

4.2.2 Heteroscedasticity test

Prior tests indicated the presence of heteroscedasticity; but, to ensure reliable inference, all results are presented with heteroscedasticity-robust standard errors. As such, all heteroscedasticity test statistics results are not presented White (1980) and Wooldridge, J. M. (2010)

4.2.3 Autocorrelation

4.2.3.1 Autocorrelation: Durbin Watson (DW) Tests

This test assess the presence of autocorrelation in the residuals of the regression model, the Durbin-Watson (DW) statistic was applied. The model used 24 observations spanning the years 2000 to 2023, across 16 banks, with three explanatory variables and one dependent variable. Autocorrelation happen in our statistics when the residuals (error terms) of a regression model are correlated with each other, opposite to assumption of independent errors (Gujarati, 2004). The DW statistic ranges between 0 and 4, with a value near 2 indicating that there are no autocorrelation in the analysis; values below 2 lead us to positive autocorrelation, in the meantime values above 2 indicate negative autocorrelation.

Here the calculated DW statistic was **2.619**, which points toward possible negative autocorrelation. However, to interpret this value more accurately, it must be compared with the lower (dL) and upper (dU) critical values from the Durbin-Watson significance table based on the sample size (n = 24), number of predictors (k = 4), and a 5% significance level. The critical values for this setup are approximately dL = 0.99 and dU = 1.41. Using the Durbin-Watson decision rules, the range for inconclusive results regarding negative autocorrelation lies between $4 - dU = 2.59$ and $4 - dL = 3.01$.

Since the DW value of **2.619** falls within the range of doubt, the test does not provide full evidence to confirm or reject the presence of negative autocorrelation in the model. Consequently, even though the DW statistic lead us potential negative autocorrelation, the evidence is not clearly supportive to say this or that. Having this in mind, it is advisable to

support the DW test with additional diagnostic checks—such as the Breusch-Godfrey LM test—to more robustly detect higher-order or complex autocorrelation patterns in the residuals.

Table 4.3 Durbin Watson test of autocorrelation

durbin -watson d-statistics(4,24)	**2.619386**

4.2.3.1 Autocorrelation: Breusch-Godfrey Serial Correlation LM Test

The Breusch-Godfrey Serial Correlation LM Test is applied to detect autocorrelation in the residuals of a regression model, paving the way for the identification of higher-order correlations beyond just first-order, not like that of the Durbin-Watson test. Due to this, the test was conducted with one lag (p = 1), yielding a chi-square (χ^2) statistic of 2.555 with 1 degree of freedom. Associated p-value was 0.11. As the p-value is beyond the conventional significance levels of 0.05 and 0.10, we fail to reject the null hypothesis, which posits that there is no autocorrelation in the residuals. Consequently, the results indicate that there is no strong evidence of serial correlation in the model, exposing that the residuals are independently distributed and the model is free of autocorrelation.

Table 4.4 Breusch-Godfrey Serial Correlation LM Test

lags (p)	chi2	df	prob>chi2
1	**2.555**	**1**	**0.11**

4.2.4 Tests for Multicollinearity

Multicollinearity refers to a coincidence in regression analysis when two or more independent variables are highly correlated, radically changing the estimated relationships between predictors and the dependent variable (Kennedy, 2008). To analyze multicollinearity, the Variance Inflation Factor (VIF) is very often employed. VIF values gives an index that measures how much the variance of an estimated regression coefficient increases due to collinearity. Interpretation guidelines suggest that a VIF of 1 indicates no multicollinearity, values between 1 and 5 showed low to moderate multicollinearity, values above 5 may indicate high multicollinearity, and values exceeding 10 point to severe multicollinearity that could warrant corrective measures.

In the current analysis, the VIF values for the independent variables are as follows: Real GDP (rgdp) at 1.36, Annual Inflation (aninfr) at 1.33, and Interest Rate (intr) at 1.03, with a mean VIF of 1.24. All these values fall well below the threshold of 5, indicating that multicollinearity is not a concern in this model. Therefore, the predictor variables are not highly correlated with each other, allowing for reliable estimation of their individual effects on the dependent variable. No corrective actions, such as variable removal or the application of dimensionality reduction techniques like principal component analysis, are necessary in this context.

Table 4.5 variance inflation factor test of multicollinearity

variable	Vif	1/vif
rgdp	1.36	0.73488
aninfr	1.33	0.750863
intr	1.03	0.967118
mean vif	1.24	

4.2.5 Stationary Test

In time series analysis, stationarity is a main concept claiming that a series has a constant mean, constant variance, and constant auto covariance through time. The series is considered stationary, when all the above properties kept constant. In contrast, if a series exhibited changing mean or variance over time, it is said to be non-stationary (Brook, 2008). Relationships among variables may be significant as if they aren't mostly due to the presence of unit root. Due to this fact it is better to test very cautiously to proceed with time series modeling.

The Augmented Dickey-Fuller (ADF) test is a widely used method for detecting unit roots in a series. The null hypothesis of the ADF test posits that the series has a unit root (i.e., is non-stationary), while the alternative hypothesis suggests stationarity. In this analysis, the ADF test yielded a test statistic of -3.91. Comparing this to the critical values at the 1% (-3.75), 5% (-3.00), and 10% (-2.63) significance levels, the test statistic is more negative than all critical values. This leads to the rejection of the null hypothesis at the 1% significance level, indicating strong evidence that the series is stationary

Table 4.6 Interpolated dicky fuller test of stationarity

	test statics	1%critical value	5% critical value	10%critical value
z(t)	**-3.91**	**-3.75**	**-3**	**-2.63**

4.3 Time series data model estimation

This part presents the estimation results of the time series model assessing the effect of macroeconomic variables on the financial performance of banks in Ethiopia, using Return on Assets (ROA) as the dependent variable. The dataset comprises panel data from 16 banks, covering the period from 2000 to 2003. Data were collected from the National Bank of Ethiopia (NBE) and the World Bank Database. The empirical model includes inflation rate (aninfr), real gross domestic product (rgdp), and interest rate (intrs) as independent variables. The estimation was conducted using Ordinary Least Squares (OLS), with heteroscedasticity-robust standard errors applied to ensure reliable inference in the presence of potential heteroscedasticity.

The model deeply showed that approximately 18.6% of the deviation in ROA, as exhibited by the R-squared value of 0.186.in this data it was clearly showed that while macroeconomic factors such as inflation, real GDP, and interest rates have some influence on bank profitability, a significant amount of the variation is driven by other variables not included in the model. Because robust standard errors were used (vce robust) in Stata, the Adjusted R-squared was not reported, in line with best practices, as robust estimation alters the inference without affecting the model's goodness of fit

With a coefficient of -0.0363 and a p-value of 0.056.the regression result has negative and marginally significant effect on ROA.Therefore low performance on banks profitability is highly linked with increased inflation this may happen through increased uncertainty and reduced purchasing power. Real GDP and interest rates, yet, showed no statistically significant impact on ROA, with p-values of 0.675 and 0.938, respectively.

Descriptive statistics for the variables indicate that the average real GDP over the sample period was 1213.25 with a standard deviation of 707.18. Inflation averaged 14.25 percent with considerable variation (standard deviation of 11.69), ranging from -10.8 to 36.4. The average

interest rate was 7.27 percent with minimal variation, while the mean ROA across banks was 2.70 percent.

Diagnostic tests were conducted to ensure the trust on the model. The normality test, based on skewness and kurtosis, produced an adjusted chi-square value of 13.1 with a p-value of 0.0531, indicating marginal deviation from normality, though acceptable at the 10 percent level. Autocorrelation was tested using the Durbin-Watson statistic, which yielded a value of 2.62, suggesting no serious autocorrelation. The Breusch-Godfrey LM test also supported this, with a p-value of 0.11, allowing us to accept the null hypothesis of no serial correlation.

Multicollinearity was analyzed using the Variance Inflation Factor (VIF), with all values well below the critical threshold of 10. Specifically, rgdp had a VIF of 1.36, aninfr 1.33, and intrs 1.03, indicating low multicollinearity. Stationarity of the variables was tested and confirmed through the Augmented Dickey-Fuller (ADF) test, where the test statistic of -3.91 was more negative than all critical values at 1%, 5%, and 10% significance levels, implying that the variables are stationary in their levels.

Even though initial tests implied that the presence of heteroscedasticity, heteroscedasticity-robust standard error methods were used to address this issue, on reliable literatures to adjust standard error. The matrix shows that inflation has the strongest bond of correlation with ROA (-0.426), supporting the results found through regression. With -0.1336 and -0.008 respectively Both Real GDP and interest rate showed weak correlation result with ROA.

Table 4.7 Regression result-ROA as dependent variable

Number of obs =24

F (3, 20) =1.26

Prob>f =0.3163

R-squared =0.1860

Adjusted R-squared =0.0639

Root mse =.86873

variables	Coef	std.err	t	pro
Aninfr	-0.0362605	-0.0178817	-2.03	0.056
Rgdp	0.0001273	0.0002988	0.43	0.675
Intrs	0.0261238	0.3311666	0.08	0.938

During the period of investigation inflation found to be the primary macroeconomic factor impacting banks profitability. This is clearly supported by diagnostic tests conducted despite the fact that heteroscedasticity present the use of robust standard error ensures valid estimation

4.4 Correlation Result between dependent and independent Variables

Table 4.8 Correlation result between dependent and independent Variables

	Rgdp	**aninfr**	**intrs**	**boa**
rgdp	**1**			
aninfr	**0.4903**	**1**		
intrs	**-0.1472**	**0.02**	**1**	
ROA	**-0.1336**	**-0.426**	**-0.008**	**1**

During the study period, the results found on the relationship between dependent and the independent variables showed very interesting dynamics. ROA and RGDP (Real GDP) is found to be weakly negative correlation, with a coefficient of -0.1336, suggesting that as economic output increases, bank profitability may experience a slight decline; however, this relationship is very weak and might not be statistically significant. The relation between ROA and annual inflation rate (ANINFR) is moderately negative, with a coefficient of -0.426, implying that higher inflation tends to be in line with lower ROA. In this context the moderate relationship suggests that inflation may have much more pronounced negative impact on bank profitability, this is going to happen by increasing costs or reducing the real value of returns. Conversely, the correlation between ROA and interest rates (INTRS) is almost insignificant, from all results interest rate has very interesting relation. Having -0.008 which means that fluctuations on interest rate has little or no impact on ROA for the given period of time and for given data set. Generally inflation is the only factor that has significant impact on ROA while other has minimal or no effect on the ROA.

4.5 Result Analysis

The regression analysis was conducted to examine the impact of inflation (aninfr), real GDP (rgdp), and interest rates (intrs) on bank profitability (ROA), using a sample of 24 observations. Below is a detailed interpretation of the results:

Inflation (aninfr):

In the regression for inflation (aninfr) it is found to be resulted a negative coefficient of -0.03626, revealing that inflation highly affects the profitability of the banking sector, as it is measured by Return on Assets (ROA). Literally, a one-unit increase in the inflation rate leads to a 0.03626 percentage point decline in ROA, holding other variables constant. As result of erosion of real interest income, rising operational cost and increased credit risk resulted from reduced borrower purchasing power inflationary pressures on the banks lower banks profitability.

While this implies that the relationship is not strongly statistically significant, however the p-value related with this coefficient is 0.056, which is slightly above the conventional 5% threshold for statistical significance.in any ways it is still suggestive of a meaningful economic effect.

This results at the end of the analysis coincides with the broader empirical literature, both internationally and within Ethiopia. Studies such as those by Boyd, Levine, and Smith (2001) and Rousseau and Wachtel (2002, 2011) have shown that higher inflation depress financial sector development, especially when it exceeds certain limit. In the Ethiopian context, research by Wolde-Rufael (2008), Mengesha and Holmes (2013), and Teshome (2015) similarly supports the notion that inflation negatively impacts banking sector performance and financial intermediation. All the above studies have the same conclusion on that continual inflation lower the real value of bank assets and returns, deters long-term investments, and weakens credit flows.

This imply that macroeconomic stability, particularly inflation control, is crucial for maintaining healthy bank profitability. For policymakers, it strengthen the need to adopt effective inflation-targeting strategies and sound monetary policies. Even if the statistical evidence is borderline,

the economic rationale and consistency with prior findings suggest that inflation is a key determinant of financial performance in Ethiopia's banking sector.

Real GDP (rgdp)

Measured by ROA real GDP (rgdp) with coefficient of 0.0001273 suggest that it has a very weak relation with bank profitability as well as economic output which means that one unit increase in real GDP leads to marginal 0.0001273 decrease in ROA all other things kept constant. But, the magnitude of this effect is very small and economically negligible, indicating that changes in the level of economic activity do not have a meaningful impact on the profitability of banks within the period.

Additionally, the statistical evidence further supports the insignificance of this relationship. The t-value of 0.43 is far below the conventional critical values and the p-value of 0.675 is very significantly above the 5% threshold signaling that the observed effect is not statistically significant. More briefly there is insufficient evidence to conclude that real GDP movements affect ROA in the Ethiopian banking sector during the period under review.

This result found to be in contrast with some findings in the empirical literature, where real GDP is often found to have a positive influence on financial sector performance. For example, studies by Demirgüç-Kunt and Maksimovic (1998) and Beck et al. (2000) highly associate economic growth with good banking profitability due to increased lending opportunities and stronger demand for financial services. Very interestingly, in the Ethiopian context, the weak linkage between GDP and ROA may clearly show structural issues in the economy, such as a dominant informal sector, limited financial inclusion, or a banking sector that is not fully integrated with the broader economy.

Even in prior experiences there were positive GDP profitability relationships in our context it was found that in the studied period GDP does not affect profitability significantly in Ethiopian context however we must keep country specific dynamics when assessing macroeconomic determinants of financial performance.

Interest Rate (intrs)

Depending on the regression result interest rate (intrs) has low positive coefficient 0.0261238 explaining that increasing the interest rate is highly associated with increasing banks profitability measured by return on asset (ROA).From the coefficients it shows that it is 0.0261238 unit increase in ROA due to one unit increase of in the interest rate however this explanation should be seen cautiously due to statistical and practical concerns.

There is no statistically significant relationship with a very low t-value of 0.08 and the extremely high p-value of 0.938 in other words there is no evidence that fluctuation in interest rate affect ROA in this model context .it is very difficult for the coefficients to explain meaningfully.

This low coefficients usually related with data issues this technical anomalies can inflate coefficients without reflecting the true nature of economic relationships hence having low coefficients they are considered economically meaning less in this analysis.

This finding happens to be totally different from prior results which shows significant effect of interest rate in terms of lending margin, investment return and cost of funding for example Demirgüç-Kunt and Huizinga (1999) stated that by spreading lending and deposit rate higher interest rate could improve banks profitability. However in Ethiopian context where interest rate is not freely given for the market or may not freely fluctuate with the market this kind of relation may be automatically absent.

Generally, even though the coefficient for interest rate is very large and negative it does not explain or statistically significant to explain ROA in Ethiopian context.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIO

5.1 Introduction

This chapter review results found on chapter four, in line with that it presents possible conclusion and recommendations based on the findings.

5.2 Summary

The research investigates the effects of inflation on the progression of Ethiopia's financial sector, mainly of the banking sector, from 2000 to 2023. Primarily the aim was to understand the relationship between inflation and the growth of the financial sector, specifically aimed: to analyze the direct effects of inflation, keeping in mind the moderating influence of economic growth, determining how fluctuations in interest rates affect the inflation-finance connection, and suggesting related policy suggestions.

A quantitative research methodology was selected, accommodated by an explanatory research design to identify causal relationships between macroeconomic variables. The study fully used on secondary time series data found from the World Bank, International Monetary Fund (IMF) and National Bank of Ethiopia (NBE). The analysis was done by STATA statistical software 2.0 version, by linear regression models. The Return on Assets (ROA) was used as a proxy for financial sector performance, inflation as the main independent variable and real GDP and interest rate as control variables.

The regression findings resulted that inflation negatively affects the profitability of Ethiopia’s banking sector, with a coefficient of. Though only marginally statistically significant, the result is economically meaningful and in line with international literature. Oppositely, real GDP was found to have a statistically insignificant and weak negative effect on ROA, suggesting that overall economic growth does not directly affect bank profitability in the Ethiopian context.in the same way, interest rate volatility showed an extremely large but statistically insignificant

negative coefficient, revealing possible data scaling issues or limited impact due to interest rate regulations.

All in all, the study strongly suggest that controlling inflation is critical for maintaining financial sector stability and profitability. The use of STATA software enabled detailed regression analysis and diagnostic testing, ensuring the reliability of results and laying a foundation for future policy design to strengthen Ethiopia's financial sector in the face of inflationary challenge.

5.3 Conclusion

This study projected to study the effects of inflation, real GDP, and interest rates on the profitability of Ethiopia's banking sector, measured by Return on Assets (ROA). Using regression analysis on a sample of 24 observations, the results found to show that macroeconomic factors influencing bank performance in the Ethiopian context.

The results clearly showed that a negative coefficient of -0.03626 for inflation, exposing that higher inflation rates are in line with decreased bank profitability. Even though the p-value of 0.056 indicates marginal statistical significance, however the economic implications are noteworthy. Elevated inflation kill real interest income, increase operational costs, and trigger credit risk, consequently it is reflected on financial performance of banks

The coefficient for real GDP was 0.0001273, indicating a negligible and statistically insignificant relationship with ROA. According to the results found on the study during the study period changes on the economic has no any effect on the profitability of banks. This may reflect structural aspects of Ethiopia's economy, such as a dominant informal sector and limited financial inclusion.

The result showed a **very small positive coefficient of 0.0261238** for interest rates; however, this result **lacked statistical significance**, with a **p-value of 0.938**. Despite the change in sign and scale, the coefficient remains economically negligible, suggesting **no meaningful impact** of interest rates on bank profitability. This may be due to **data scaling issues, limited variation, or potential outliers** in the dataset.. In Ethiopia's context, where interest rates are often regulated, their direct effect on bank profitability may be insignificant since it is almost constant and are not market oriented.

The findings strengthen the importance of keeping macroeconomic stability, primarily in controlling inflation, to sustain the health of the banking sector. Policymakers should give priority to effective inflation-targeting strategies and vibrant monetary policies to enhance a viable environment for financial institutions.

5.4 Recommendation

Depending on the empirical analysis the following recommendations are presented by the researcher

- To minimize the lethal effect of inflation it is mandatory for the national bank to keep inflation at manageable level. This can be applicable by enhancing monetary policy tools and strengthening strategies aimed at targeting inflation. In addition to the above to reduce the effects of inflation on the financial sector it is very important for policy makers to apply updated inflation forecasting models therefore it will be very easy to adjust interest rate and also the liquidity.
- Enhancement of internal risk assessment tools for the financial sector is vital for the survival of the institutions as it helps to manage risks linked with inflation however this requires some sort of adjustment on lending rate and portfolio composition in line with inflation
- To better reduce the impact of inflation government organizations and regulatory bodies must promote diversification within the financial sector to sustain during inflationary challenges.it can be achieved by promoting advancements in the field such as digital finance and non-bank financial services.
- The national bank of Ethiopia must strengthen the supervision on the financial sector regarding whether they are well capitalized and resilient for asset devaluation caused by inflation. Inflation related scenarios must be part of regulatory tests during periodic supervision
- Underserved and unpresented areas must be focuses of go government initiatives to promote saving even where inflation is there.
- Different organizations involved in the financial sector including educational institutions should come together and work on researches to narrow the gap on the changing dynamics between inflation and financial sector metrics like return on asset (ROA).

5.5 Suggestion for future research

Recommendations for Future Research: Subsequent studies could explore the causal mechanisms linking inflation to bank profitability, perhaps employing larger datasets or alternative econometric models. Additionally, examining the role of other macroeconomic variables, such as exchange rates or fiscal policy, could provide a more comprehensive understanding of the determinants of bank performance in Ethiopia.

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