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College of Business and Economics

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The Role of the Banking Sector in Capital Accumulation and Economic Growth of
Ethiopia: An ARDL Approach

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The Role of Banking Sector in Capital Accumulation and Economic Growth of Ethiopia: An ARDL Approach

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College of Business and Economics
Master of Business Administration Program
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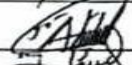
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ABRIVATION AND ACRONYMS

ARDL- Autoregressive Distributed Lag

CUSUM -Cumulative Sum of Recursive Residuals

CUSUMQ -Cumulative Sum of square Recursive Residuals

ECM -Error Correction Model

ECT- Error Correction Term

EU -European Union

GCF- Gross Capital Formation

GDP- Gross Domestic Product

GFCF -Gross Fixed Capital Formation

GNS -Gross National Saving

IMF- International Monetary Fund

MENA- Middle East And North Africa

OLS -Ordinary Least Square

RGDP- Real Gross Domestic Product

SSA -Sub Saharan African

SAP - Structural Adjustment Program

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ABSTRACT

This study uses the financial sector development indicator variables of deposit, loan, asset, and profit as explanatory factors and RGDP as a dependent variable to examine the empirical relationship between the banking industry and Ethiopia's economic growth. Using time series data covering the years 1980–2022, the paper empirically evaluates the contribution of the banking industry to capital accumulation and economic growth in Ethiopia. Unit root examinations, cointegration tests utilizing the ARDL approach, Granger non-causality tests, and VECM dynamics investigations of the short- and long-term dynamics are all included in the model estimate process. The analysis's result demonstrates that, although credit only has a substantial impact on short-term capital accumulation, deposits have a significantly favourable short-term impact on both economic growth and capital accumulation. However, aside from deposits, a well-designed quantitative technique has the advantage of making findings reliable and lessening the impact of researcher and subject biases, especially when the research purpose is to analyse the problems and function of the banking sector in capital accumulation and economic progress. There is unidirectional linkage that exists between credit and economic growth, Although there is a reciprocal causal connection between deposits and economic expansion, according to the analysis done to ascertain the cause and effect direction. Thus, the study recommends policymakers to strengthen the sector's capacity in a manner that would effectively distribute funds to the economy's most productive sector and mobilize larger savings in order to achieve rapid capital accumulation and sustainable economic growth. In the short run, gross national saving makes a substantial and positive contribution to capital accumulation and economic growth; however, over time, this contribution diminishes and becomes less significant. On the other hand, government expenditure has a significant long- and short-term influence on capital formation; nevertheless, it has a negligibly favorable long-term impact on economic growth and a substantially negative short-term impact.

Key words: ARDL, Deposit, Credit, Capital Accumulation, Economic Growth, Inflation, Save, Expenditure

CHAPTER ONE

1. Introduction

1.1 Background of the Study

Since financial development lowers information and transaction costs, It significantly affects saving and investment decisions, technical innovation, buildup of capital, and long-term economic growth rates. The difference between East Asia's rapid growth since 1960 and Latin America's sluggish growth can be mostly attributed to domestic savings mobilization, which is also favorably correlated with productivity growth in developing nations relative to developed ones (Abiyot,2021). Empirical research, financial economics, and neoclassical theory all support the banking industry's contribution to economic expansion. Real GDP per worker is impacted by bank loans to the private sector, according to Murty (2012) and Salleh (2007), who also established a favorable correlation between banks' role in credit distribution and capital accumulation. The same as, opinions of how best to structure a financial system to support sustained economic growths diverge

Research has looked at the connection between bank credits, bank deposits, and capital formation in Nigeria. Gebenga and Adeleke (2013) test the connection among gross capital formation, economic growth, and savings between the years 1975 and 2008. The study used co-integration, the model for vector error correction (VECM), and the VAR causality test to assess deposit money bank credit's effect on Nigeria's economic development and growth. The results showed a strong and positive correlation between economic growth and the total amount of credit given by Deposit Money Banks (DMBs) to all economic sectors. However, although DMBs' appreciation for the private sector stimulates growth, their acknowledgment of the public financial sector impedes it because of the crowding out effect.

Between 1964 and 1973, Kenya's economy underwent a mixed economy, with GDP expanding by 6.6% annually. This resulted from a stable economic strategy, strong local demand, a focus on smallholder farming, and the growth of the domestic output market. Ridiculous handling of fiscal and monetary policy in 1973 led to a gradual but steady downturn of the economy. The global recession of the 1970s made living conditions for Kenyans worse. The impact of structural adjustment programmers (SAPs) on Kenyan society is investigated in this article. Many facets of

Kenyans' everyday lives have changed as a result of a series of political and economic changes that Global Bank and International Monetary Fund pushed through the country starting in 1988 and particularly in 1991. Kenya's economy suffered after SAPs were executed in 1980–1981; this resulted in a drop in GDP per capita, food shortages, and a reduction in the standard of living. In Kenya's brief history of independence, this led to the worst economic performance.

Bank of Abyssinia began carrying out banking operations in Ethiopia in 1905, and in 1942 a arranged neatly bank was established as the country's national bank. Following the overthrow of the Dreg dictatorship, the EPRDF assumed power and developed a policy focused on the market. The two main goals of the banking industry reform were rebuilding the financial sector and enhancing national competitiveness. Many studies have been conducted on the relationship between economic growth and the functioning of the financial system. Economists contend that the financial industry's primary contribution to growth is its ability to lower transaction, enforcement, and information costs. Levine (2004) distinguished five vital roles that a financial system plays in promoting economic expansion. There is also research linking capital formation and savings to an economy's ability to grow economically. The foundation of the two-sector economy is the idea that investments in the conventional sector yield higher returns because of improved technology and easier access to both internal and external funding. According to Stiglitz & Weiss (1981), Economists tend to exaggerate the role that the financial industry contributes to the expansion of the economy and unequal or inadequate information resulted in poor risk selection. Empirical research, however, consistently shows that the growth of commercial banks, including state-owned ones, simply follows economic expansion.

Since 1991–1992, Ethiopian public and private banks have mobilized deposits that have increased continuously. The total deposit of public banks as a proportion of GDP has increased by 23%, while that of private banks has increased by 7.4%. Nonetheless, over that same period, the industry as a whole expanded by 30.6%, suggesting that public banks' success in deposit mobilization plays a significant role in the industry's overall growth rate. Of all commercial banks' credit, public bank credit accounted for a larger portion, almost 73%. Due to the NBE regulation, which required all private banks to acquire NBE Bills equal to 27% of the disbursement towards financing and advances , private banks' credit fell after 2009. In 1991, the saving-investment gap was 0.3% of GDP; by 2016, it had grown to 6.1%. When compared to the previous period, the percentage of credit extended to the state-owned firm sector fell sharply

between 2010 and 2021. Since 2011, bad debt has been a challenging issue that has lowered commercial banks' capital adequacy ratios. Between 2011 and 2020, the credit to GDP ratio almost reached the 2007–2010 level, a time of severe macroeconomic volatility in the country. The nonlinear impact of banking development on growth and its reducing marginal effect suggest that careful observation of the banking system's evolution is required to ensure its stability and growth.

There are now three types of institutions that make up Ethiopia's financial sector: formal, semiformal, and informal. Among the banks, insurance firms, and microfinance organizations that make up the formal financial system are regulated financial entities. The National Bank of Ethiopia (NBE) does not control or oversee savings and credit cooperatives, which are regarded as semi-formal financial institutions. Unregistered traditional institutions like moneylenders and Iqub (Rotating Savings and Credit Associations) and Idir (Death Benefit Associations) make up the nation's informal financial sector. The following headings provide a detailed discussion of the formal financial sector components.

The population to bank branch ratio consequently reached 12,000 persons per branch. Addis Ababa was home to roughly 32.7% of all bank branches worldwide. Simultaneously, the banking sector's total capital showed an annual gain of 31.7 percent, reaching Birr 199 billion. However, the number of insurance companies stayed at 18, and after the creation of 55 new offices in 2021–2022, their branch network grew to 690. In Addis Ababa, there were roughly 55.4 percent insurance branches functioning and 86.8 percent private branches overall. Their total capital climbed by 20.9 percent to Birr 13.4 billion, with state-owned insurance companies holding 25.2% and private insurance businesses holding 74.8 percent of the total.

1.2 Statement of the Problem

Ethiopia's financial sector is composed of the finance sector, insurance firms, micro finance organizations, credit and savings associations, and the unorganized financial sector. However, Banks dominate Ethiopia's banking industry, and the framework is somewhat archaic. The banking sector has expanded remarkably over the last 20 years. The banking industry functions under a very competitive landscape. Every bank aspires to have as many customers as possible who deposit money with them and then lend it out in exchange for a weak loan competition across banks. Customers do not have a big opportunity to borrow because the various forms of collateral needed for loans are comparable and the interest rates on loans are near together. To boost their own profitability, they are collaborating with technology, though (Tadesse et al. 2018).

Numerous empirical studies have demonstrated that increased savings and High rates of capital accumulation are required for long-term economic expansion. As a result, the banking industry's function has become essential in mobilizing domestic savings and effectively allocating them to the most fruitful uses that the economy needs in order to rapidly accumulate capital and experience economic growth (Yirgio, 2018).

Like commercial banks in other developing nations, commercial banks in Ethiopia offer a wide range of services to its customers, including the ability to pay bills online or via a mobile device, make purchases or other payments via online or mobile banking, etc. and contribute significantly to the economic expansion of developing nations like Ethiopia. Investment in a variety of economic sectors is necessary for economic progress. People deposit money into commercial banks, which then use that money to fund industrial projects. Bank loans are obtained by the investors to fund the initiatives. Commercial banks have a role in the process of making the economy wealthier, especially when it comes to capital goods that are required to increase productivity. When we look at Solow models which are typically thought of as endogenous growth models Furthermore, in their growth models, Harrod (1939) and Domar (1946) acknowledged the role that savings play in economic progress. This model points out that developing countries have not benefited equitably from technology advancements throughout time. Theorists of new growth tie advances in technology to advances in product understanding. This approach highlights that the application of knowledge, as opposed to labor and capital,

produces economic progress. According to the equilibrium growth path of this model economy, the rate of national saves, or the proportion of income saved, must be the same as the sum of the labor force growth rate and the capital-output ratio. According to TadesseYirgo (2018), the financial sector can benefit equally from doubling the savings rate, as long as it isn't used to replace outdated capital goods. The growth model proposed by Harrod and Domar implies this.

Ethiopia's financial industry is now in a primitive and precarious state. It is closed, tiny, and mostly owned by the state. It is also not well developed. The assets of the banking industry are over two thirds owned by state-controlled commercial banks. Ethiopia has a low degree of financial intermediation, partly as a result of the public's mistrust of the banking industry. This is thus brought about by a severely deficient oversight system, heavy state ownership, and extensive lending overseen by the National Bank of Ethiopian (NBE). Furthermore, a major factor in the government-owned banks' failure throughout the early 1990s was the issue of non-performing loans. To boost their own profitability, they are collaborating with technology, nonetheless (Bezabeh and Desta, 2014).

The organizations, technologies, and regulations that control how the intertemporal exchange of payments is organized at a given moment in time are collectively referred to as the financial system. In order to emphasize that the interplay between institutions, technology, and game rules should allow the financial structure to create a coherent system, a review of a financial system's subsystems is undertaken. They come to the conclusion that structural policy that attempts to modify just a portion of the financial structure may prevent it from operating as a whole (Tadesse et al., 2018).

There aren't many studies on this topic, as far as the researcher is aware. They are Venkati (2016), Muluneh (2015), and Murty et al. (2012). Both Muluneh (2015) and Venkati (2016) attempted to determine the impact of banks' involvement in capital accumulation as shown by their investment, loan expansion, and mobilization of deposits; however, neither study demonstrated the effect on long-term economic growth. Comparably, Murty (2012) attempted to determine the long-term influence of credit provided by the banking industry on economic growth, however this analysis also ignored the growth's immediate effects and their direct relationship .i.e., whether credit provided by the banking sector causes or merely follows economic expansion. For this reason, I have to use the necessary and preferred secondary data

sampling for the study, that is, from the documentation and the National Bank report since 2016. We are required to point out problems using this from different sampling methods (Tadesse et al., 2018).

This study is based on the memorial from the year 1980s. It is important to see the increase in the number of investments and lending in addition to the service delivery and banking usage of the community. Hence, since this study was done 10 years ago, a timely study should be conducted due to the creation of banking opportunities in different places and the changes in the society's attitude. The previous studies have tried to show based on the information obtained from various sources, however, the society needs to focus on investing in the use of banks and increasing the amount of capital without any real information, so it should be an educational study to bring the country's growth to a higher level.

1.3. Research Questions

Given the overview of the banking industry's contributions to capital accumulation and economic growth provided above, the following primary research questions have been addressed.

- ✓ What impact does Ethiopia's banking industry have on the country's capital accumulation?
- ✓ What impact does Ethiopia's banking industry have on the nation's economic expansion?
- ✓ What is the direction of relationship between Ethiopia's economic growth and the capital accumulation of banking sector?

1.4. Objective of the Study

1.4.1. General Objective

This study's primary goal is to use time series data to investigate how Ethiopia's banking industry contributes to capital accumulation and economic expansion.

1.4.2. Specific Objective

- ✓ To investigate how Ethiopia's capital accumulation is impacted by the banking industry.
- ✓ To investigate how Ethiopia's banking industry affects the country's economic expansion.
- ✓ To determine which way the relationship between Ethiopia's economic growth and the

capital accumulation of the banking sector is causal.

1.5 Hypothesis

The following hypothesis is put out by the study in an attempt to fulfill the aforementioned objectives:

1.5.1 Hypothesis for Capital Accumulation

- H1: Banking sector deposit has significantly positive effect on gross capital formation
- H2: Government expenditure has significantly positive effect on gross capital formation.
- H3: Savings in the banking industry have a major positive impact on gross capital accumulation.

1.5.2 Hypothesis for Economic Growth

- H1: Deposits in the banking industry have a notably positive impact on economic expansion.
- H2: Economic growth is substantially positively impacted by gross capital formation.
- H3: Government expenditure has significantly positive effect on gross economic growth

1.6 Significance of the Study

It is anticipated that by determining the possible relationship between the financial intermediation responsibilities of Ethiopian banking sector in capital accumulation, the research would add to the body of knowledge. Understanding how saving mobilization affects capital accumulation and economic growth will support growth model claims. Your comprehension of the financial sector's role in economic expansion and the implications for policy is improved by the study. Therefore, the study's conclusions will aid in the development of good banking systems that can effectively channel savings into a channel for quick capital production, which will spur economic growth. The study's final relevance is that the results might provide the basis for additional research in the field. This implies that the results would spur additional researchers to carry out comparable investigations with the goal of examining unresolved problems and adding to the body of knowledge about the nation's banking industry and the financial sector at

large.

1.7 Scope of the Study

The study is limited in scope with regard to the issue of examining the role of the banking sector capital accumulation and growth. The study covers the period between the years 1980-2022 G.C in Ethiopia due to the unavailability of data. The study's conclusions are limited to their applicability to the banking industry's contribution to the expansion of the economy; they do not apply to the financial sector as a whole. However, the banking industry plays a major role in Ethiopia's financial sector development, as other areas of the financial sector have remained relatively underdeveloped. It includes those that are part of the report of the National Bank of Ethiopia since 1980. The study ignores other factors like employment creation, income generation, and access to financial services, which are crucial for understanding the financial sector's impact on the economy.

1.8 Limitation of study

Due to time constraint, the researcher is limited only on quantitative research analysis and basically focusing on the Financial sector Role of the capital accumulation and economic Growth for the period of 1980/81 to 2012/23. Due to non-availability of informant body to collect quality data, there is a delay. And the closed relationship between explanatory variable. However, not being part of the report of the National Bank of Ethiopia has created its own limitations.

1.9 Organization of the study

The research would be arranged as follows for the remaining portion. The research design and methodology would be provided in chapter three, while the theoretical and empirical literatures pertinent to the topic would be examined in chapter two. The research findings would be presented in Chapter 4, and the conclusions and suggestions would be covered in Chapter 5.

CHAPTER TWO

2. Literature Review

This section of the study will provide an overview of the theoretical and empirical literature on the impact of banks' activities, particularly their extension of credit and deposit mobilization, on a nation's economic growth. The theoretical literature is presented in the first section, and the results of the empirical literature are presented in the second. Lastly, the chapter will conclude with a discussion of the research gap and the creation of the conceptual framework.

2.1 Theoretical Literature

According to economic theory, long-term economic growth depends on a stable and effective financial system that includes banks, bond and equity markets, and channels capital to its most advantageous uses. For developing and capital-scarce nations, the financial sector's contribution to economic growth through effective capital production is especially important.

Definition of the financial structure: At every given moment, the institutions, technologies, and regulations that control how the intertemporal exchange of payments is organized are collectively referred to as the financial structure. In Klaus (1999) and Andreas, ReinhardH, Schmidt, and Marcel (2000), the subsystems of a financial system are discussed. It is emphasized that the interplay between institutions, technology, and game rules should allow the financial structure to form a cohesive system. They draw the conclusion that structural policies that seek to modify certain aspects of the financial system may hinder its overall operation. Similar to this, the economy will experience a crisis due to the ineffective financial system. The crisis is caused by an abrupt reversal of short-term capital inflow, but it is further exacerbated by the financial institutions' incapacity and inefficiency in allocating money to the most productive sectors of the economy. It follows that long-term economic growth in the financial sector is contingent upon the existence of a sound financial system capable of effectively allocating and directing financial resources towards their most advantageous use. Great savings were converted into capital accumulation, and this process was accelerated in great part by the banking industry. However, it's possible that the banking industry wasn't allocating capital effectively. According to Ghani and Suri, there is a negative correlation between the rapid expansion of bank lending in Malaysia and the rise of total factor productivity.

According to a substantial body of research in growth accounting, long-term economic growth cannot be largely explained by physical capital accumulation alone Dale, Mun, and Kevin (2008). Therefore, If finance is to explain economic growth, then there should be theories describing how financial development influences resource allocation decisions in ways that encourage productivity growth. These theories ought to refrain from overly narrowly concentrating the analytical emphasis on total savings. To organise a study on how financial systems affect decisions about investments and savings and, subsequently, growth, Levine R. (2005) highlighted five major roles the financial system provides in emerging to lessen information, enforcement, and transaction costs. Although there exist alternative classification schemes for the services rendered by the financial system (Merton, Robert, & Zvi, 1995, 2004). In my opinion, Levine's five categories listed below would be more useful for structuring a study of the theoretical literature. Financial systems:

Generate advance information regarding potential investments and distribute funds. After financing, keep an eye on investments and enforce corporate governance. And trading, diversification, and risk management easier. Gather and combine savings. Facilitate the trade of products and services.

Although these financial functions are offered by all financial systems, there are significant variations in the quality of these services. Financial development results from improved performance of financial instruments, markets, and intermediaries in completing the five financial duties listed above as well as in reducing, if not completely eliminating, the effects of information, enforcement, and transaction costs. As stated by Adwa D. (2013),

2.1.1 Finance and Economic Growth Models

I. Neoclassical Growth Model

This is commonly understood to be the actual gross domestic product (GDP) change as a percentage, typically expressed annually. The growth in per capita GDP is usually utilized for such purposes when comparing countries. The goal is to account for the size of the nation, as represented by the nation's total population. To take into consideration variations in prices over time and space, a distinction between nominal and real GDP is typically also noted. In this thesis, the real GDP of Ethiopia divided annually serves as my proxy for economic growth. The Solow model, which contends that long-term economic development is independent of the savings rate

(Solow and Swan, 1956), greatly dominated growth models until recently. This model states that sustained increases in labor and savings rates will only temporarily affect the pace of production growth over the long run. As a result, innovation or technical advancements can lead to sustainable economic growth. Hence, the rate at which physical capital is invested is mostly determined by the financial market, and shifts in investment were previously believed to have a transient effect on the economic growth model. A steady rise in the labor and saving rates will only temporarily affect the rate of output growth over the long run, so innovation or technological advancement can lead to sustainable economic growth. As a result, the financial market only slightly influences the rate at which physical capital is invested, and changes in investment were thought to have an immediate impact on economic expansion.

II. Endogenous Growth Model

Models that went against the conventional wisdom of Solow models, which are classified as endogenous growth models (Solow, 1956) unlike the model mentioned above, Harrods, (1939) and Domar (1946) recognized in their growth model the contribution of savings to growth. This model points out that developing countries have not benefited equitably from technology advancements throughout time. Theorists of new growth tie advances in technology to advances in product understanding. This approach highlights that the application of knowledge, as opposed to labor and capital, produces economic progress. According to this model, the national savings rate that is, the percentage of income saved must match the total of the labour force growth rate and the capital-output ratio in order for an economy to be on an equilibrium growth path. The financial sector can infer from the Harrod-Domar growth model that doubling the savings rate will have an equivalent impact on economic growth, with the possible exception that some savings may be used to replace capital assets that are becoming obsolete.

Many theoretical works on finance and growth have arisen since Lucas (1988) and Romer (1989) published their early endogenous growth model. Among the few who have modeled the simultaneous creation of the financial sector and the course of financial progress are Ramaseth (1991) and Saint-Paul (1991). As of right now, a number of studies have included the financial sector's part in the endogenous growth model. The following three channels were noted by (Pagano, 1993) as the ways in which financial development influences growth: enhancing the rate of private savings, boosting the marginal return on capital, and improving the efficiency of

financial intermediation. A more robust financial system can accelerate the accumulation of physical capital and increase overall rates of saving and investment, which will all contribute to growth.

One can wonder how the growth of the banking industry influences growth in light of the aforementioned factors. Is that through the channel of increased productivity brought about by the discovery of new knowledge, as is the case with endogenous growth theory, or through the channel of capital formation, as is the case with old growth theory? Benhabib and Spiegel (2010) discovered that the development of the financial sector encourages the accumulation of capital as well as the growth of productivity.

2.1.2 Financial Structure, Capital Accumulation, and Economic Growth

The relative benefits of various financial structure types have been the subject of a large body of literature; however, when considered collectively, the research to date has not come to a consensus regarding the relative merits of different financial structure types in terms of stimulating economic growth (Linetal, 2009). For the sake of this study, divergent financial structure theories The relationship between financial structure and economic growth can be investigated using a bank-based, market-based, and financial services perspective.

Banks are superior at mobilizing savings, spotting wise investments, and enforcing strong corporate governance, according to proponents of bank-based financial systems. This is especially true in the early phases of growth and development and in weak institutional environments. As a result, financial markets are less effective at reducing informational asymmetry; as a result, financial systems centered on banks should be more effective at allocating resources and fostering economic growth. But banks are cautious by nature, which might stifle innovation and limit economic growth.

Financial markets, such as the stock and bond markets, are superior at risk management, capital allocation, and reducing the issue of overly dominant banks, according to the proponents of a market-based financial system (Levine and Zervos, 1998). Strong banks in particular can hinder innovation by safeguarding incumbent businesses and obtaining information rent. Hence, proponents of the market-based perspective emphasize that markets will lower the inherent rent in bank related efficiencies and hence promote economic expansion. Merton and Bodie (1995) offer a financial services perspective that downplays the significance of the bank-based versus

market-based debate, in contrast to the reasons made above. This theory holds that the financial sector evolved to supply financial services and correct market defects. This means that any financial agreements are made in order to take advantage of any investment possibilities, exercise corporate control, and mobilize savings. Therefore, any type of financial arrangement that can effectively fulfill this role will encourage economic expansion. According to the financial services perspective, the emphasis would then be on how to establish an environment that is conducive to intermediaries and the market providing reliable financial services to the economy.

Given the aforementioned reasoning, Porta (1998) offers the law and finance view, a unique variation on the financial services view that can be used in conjunction with the market- and bank-based views. According to the academics mentioned above, the legal system has a significant influence over an economy's financial structure. This argument holds that common law nations, like England, are more likely to have financial systems based on markets, whereas those under civil law, like Germany, are more likely to have financial systems based on banks. Common law jurisdictions prioritize minority shareholder rights, which can have positive effects on the securities market on the other hand, civil law jurisdictions favor financial intermediaries over markets because their debt contract provisions are more lenient. Thus, even while every institutional arrangement has advantages and disadvantages of its own, the nation's legal system has a big impact on how well the financial sector mobilizes savings and allocates capital, which in turn influences long-term economic growth.

2.1.3 Financial Sector Capital Formation and Economic Growth

Five fundamental roles of the financial sector that contribute to economic growth have been identified by theoretical literature on the finance-growth relationship. These include mobilizing savings, facilitating trade, diversification, and risk management, gathering data on possible investments and allocating money, keeping an eye on borrowers and enforcing corporate controls following the granting of financing, and facilitating the interchange of commodities and services. As a result, the financial sector is considered developed if it has increased efficiency and efficient if it carries out these fundamental tasks well.

Savings from surplus units are mobilized by the financial system for investment purposes, creating a large pool of funds for large projects. This process, facilitated by financial

intermediaries and markets, contributes to faster aggregate investment, capital accumulation, and economic growth. This role is crucial for early-stage economies with lower income and capital scarcity, and needs a financial system capable of effective risk management.

Because of this, a sophisticated financial system, a vital component of the economy, utilizes financial instruments to facilitate risk trading, hedging, and pooling across firms and industries. This system directs capital towards productive sectors, enabling risk diversification and innovation, as risk-averse individuals invest in a portfolio of new technologies. .

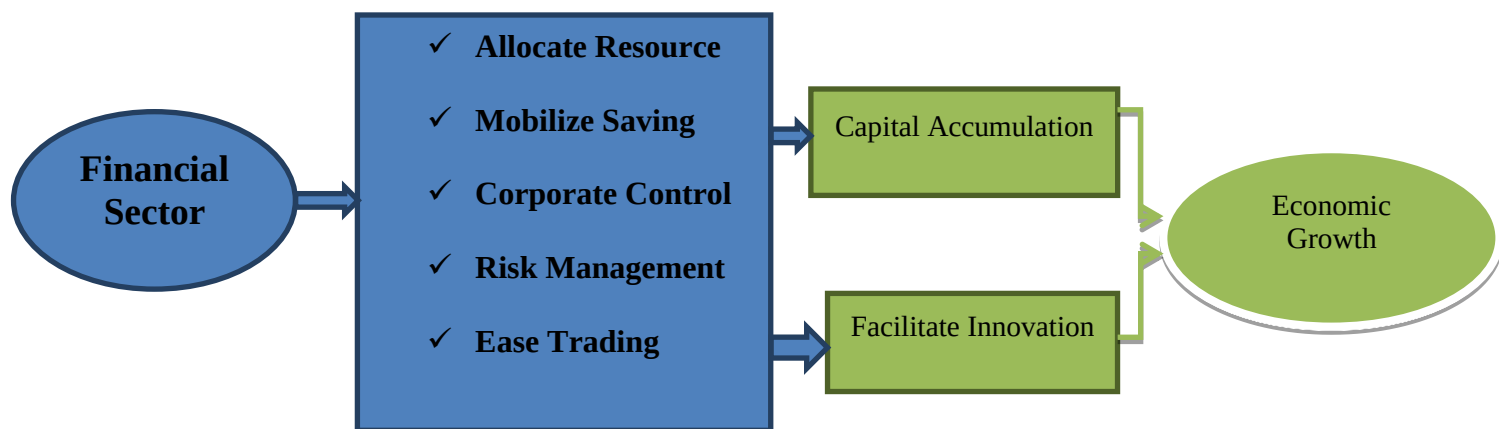
Financial institutions play a crucial role in maintaining fair financial practices, regulating the economy, and promoting prosperity in a capitalist system of economics. In order to choose which financial institution is most suited to fulfil a particular objective, it's critical to comprehend the distinctions between the various sorts of institutions and their functions. Financial institutions are crucial because, at their core, they make it possible for people to obtain the money they require. For instance, banks perform a variety of functions, but their main function is to receive deposits from those who have money, combine them, and lend the money to others who don't. Banks serve as intermediaries in the loan-lending process between depositors and borrowers. The ex-ante role of financial arrangements in institutions plays a crucial role in promoting corporate control and facilitating resource allocation. These arrangements facilitate saving mobilization, capital accumulation, and growth. Establishing relationships between firms and financial intermediaries minimizes information acquisition costs and information asymmetry, facilitating better resource allocation and promoting faster capital formation and economic growth.

At a more basic level, the financial system can stimulate specialization, innovation, and growth by lowering transaction costs, claim Estrada et al. (2010). Since it has necessitated more transactions, reducing transaction costs would allow for greater specialization, much like Adam Smith's division of labor from 1776. The three fundamental purposes of money as a store, a unit of account, and a means of payment cause a quantum leap in efficiency when an economy shifts from one based on barter to one based on money. Through its ability to lower transaction costs associated with economic exchange and activity, money allows workers to specialize in particular fields. Consequently, workers are more equipped to develop new products and technology. Faster economic growth is the ultimate outcome of more innovation and specialization. The introduction of money does not cause the drop in transaction costs to end;

rather, it will continue as long as financial innovation is there. According to Estrada (2010), two examples of financial innovation that have lowered transaction costs include credit cards and automated teller machines. Financial innovation that lowers the cost of doing business will encourage more innovation and specialization, which will support economic expansion.

Generally speaking, as figure 1 illustrates, the financial sector effectively carrying out the previously indicated job promotes long-term growth by accelerating the rate of capital formation and technological innovation. For this reason, a number of studies' conclusions advise policymakers to concentrate on enhancing the financial sector's efficiency in order to ensure steady economic growth.

Figure 1: Theoretical frame work on how financial sector development contributes to growth



Source: Developed based literature Review

2.2 Empirical Literature

This section will go over the results of several empirical investigations that paint a clear picture of the topic and make it possible to pinpoint the gap in the gap in the literature, which is the main reason for this research.

2.2.1 A Cross-National Analysis of the Bank's Function in Capital Accumulation and Economic Growth

Numerous studies have demonstrated the importance of a robust and effective financial system in mobilizing both local and international savings to invest in high-yield projects. Financial

intermediaries also offer other ways to increase the risk associated with holding financial assets and give investors access to resources that they otherwise would not have. Thus, by promoting economic competition and integrating or incorporating commodities (product markets), a robust and well-developed financial sector contributes to economic progress. Numerous academic works link capital production and savings to an economy's ability to grow economically. This section contains reviews of a few of these works. Over the course of four decades, (Pahlavani, 2006) examines how savings and capital accumulation support economic growth in Iran (1960 – 2003). According to (Galbis, 2007), a two-sector economy can be considered. Because of advancements in technology, the traditional sector is thought to be more productive than the modern sector, and investors in these industries have access to both internal and external investment.

Therefore, as long as deposit institutions are open, any increase in the real rate of interest will divert resources from low-yield real investments in the old sector and enhance credit availability to investors in the contemporary one. The amount and productivity of investments made across the economy will rise as a result. According to Stieglitz and Weiss (2010), adverse risk selection occurs when there is unequal or insufficient information, especially when there is macroeconomic instability. According to Soludo, who was referenced by Gotera (2002), economists generally agree that capital accumulation plays a crucial role in the process of growth. According to the conventional growth model, which assumes distinct elements of production, output can only increase in response to greater factor accumulation and/or technological advancement.

The only way that positive factor accumulation may occur on its own is through investment. Both the one-year lag per capita gross national product and the aggregate investment-income ratio were regressed by (Iyoha, 1998). Utilizing yearly time series data spanning from 1970 to 1994, he discovered a robust and affirmative association between investment and growth. George and Mortise (2012) investigated the impact of pricing uncertainty on private investment using Chile as a case study. They maintained that the consideration of prices and quantities in relation to investment demand is necessary when analyzing adjustment programs in many developing countries. They also mentioned that due of a higher risk premium; current research highlights the detrimental effects of uncertainty on private investment (Abiodun and Basiru, 2013). According to Granger causality, savings propel economic progress, according to an

examination of the relationship between domestic savings and economic growth in Nigeria.

They advise Nigerian policymakers to use measures that will quicken savings in order to boost the country's economic expansion. Igbatayo and Ababa (2012) discovered, using the ARDL technique that movements in savings significantly influence output, and output in turn influences changes in savings. (2013) Urukpa and Ugwuegbe Studies on the connection between capital formation and Nigeria's economic growth have shown that interest rates and inflation have a detrimental effect on a nation's capacity to experience economic growth. Studies on the connection between the expansion of the banking industry and economic expansion also exist. Example, NM Odhiambo and SY Ho (2013) used bank deposit and domestic credit given by banks as a percentage of GDP to measure the development of the bank sector and found that the development of the bank sector is critical to economic growth. Development of the banking industry boosts national economic growth in Bangladesh and Palestine, respectively (Mohammed T. Abusharbeh, 2017; Raju Ahmed et al., 2019).

According to Cheng and Degryse's 2009 research, non-bank financial institutions did not correlate positively with China's economic growth, although bank development did. The rise of the banking industry has contributed to Pakistan's economic prosperity, as noted by Aurangzeb (2012). According to his findings, there is a one-way causal relationship between the growth of the banking industry and overall economic growth. The relationship between the expansion of the financial industry and economic growth reveals that demand-following exists in Russia as well (by Shigeki Ono).

However, a 1999 study by Ram that looked into the relationship between financial development and economic growth in 95 different countries found little evidence that financial development encourages economic growth. Instead, the analysis discovers an insignificant or weakly negative co-variation between the rise in real GDP per capita and financial development. Furthermore, Hye and Islam (2013) use the autoregressive distributed lag (ARDL) approach and principal component analysis technique to examine the finance-expansion relationship in Bangladesh and find a negative relationship between financial development and economic growth.

Using data from 1960 to 1989, King and Levine (1993a) conduct a cross-country analysis on 80 nations using an endogenous growth model. The findings demonstrate the beneficial relationship between financial development and economic expansion. Meanwhile, the cross-country

technique used in their research made it impossible to resolve the causation question. Panel and cross-sectional approaches are used by Kha and Senhadjin (2003) to analyse data on 159 nations from 1960 to 1999. They come to the conclusion that financial development influences economic growth in a favourable way. However, Levine, Loayza, and Beck (2000) employ the Generalised Method of Moments (GMM) technique, and their overall findings show that financial development has a positive relationship with the increase of total factor productivity as well as the rise of per capita GDP.

The majority of recent research, as reported by Mihail and Jordan (2014), provides contradictory results based on data gathered from 16 countries in central and southeast Europe. This study indicates that the rise of the financial industry has a negative impact on economic expansion. This could be the reason for the region's high NPL stock and the banking crisis that struck in 2008 and 2010. The examination of the Vanuatu economy by Ragonma (2015) showed a statistically significant positive association between the growth of the commercial banking sector and long-term economic growth, which was the opposite of the prior result. The same proxy bank loans to the private sector was used in both studies to assess the development of the financial sector, albeit the latter lagged by two years.

qbal (2012) attempted to determine the effect of credit and saving on Pakistan's economic growth earlier in the study mentioned above. Based on time series data spanning the years 1973 to 2007, the study concluded that the credit extended to the private sector and gross national saving have a significant impact on the country's long-term economic growth. Additionally, Baal et al. (2016) have demonstrated a statistically substantial and favorable correlation between capital formation and India's economic growth, both in the short and long terms. which is consistent with this finding. Consequently, both scholars draw the conclusion that capital accumulation significantly influences the economic progress of a country.

Overall, it can be said that the growth of the financial sector contributes significantly to long-term economic growth through quick capital accumulation and effective resource allocation, even though there are some regional variations that can be explained by variations in income levels, the type of proxy used, the soundness and structure of the financial sector, and other factors.

2.2.2 Africa's Country Study on the Function of Banks in Capital Accumulation

and Economic Growth

In 13 sub-Saharan African nations, Ghirmay (2004) and Atindehou et al. (2005) looked on the connection between economic expansion and financial development. Ghirmay discovered that eight countries show a bidirectional causal relationship between financial development and economic growth, whereas six show a direct causal association. All 12 of the West African sample countries showed a weak causal association, with Mauritania showing unidirectional causality from growth to finance (Atindehou et al., 2005). Schumpeter's theory that financial development drives economic growth is supported by empirical research on the relationship between financial development and growth in Botswana. The research also recommends that institutional changes and financial deepening be strengthened in order to further the country's economic development.

Between 1964 and 1973, Kenya's economy underwent a mixed economy, with GDP expanding by 6.6% annually. This resulted from a stable economic strategy, strong local demand, a focus on smallholder farming, and the growth of the domestic output market. Ridiculous handling of fiscal and monetary policy in 1973 led to a gradual but steady downturn of the economy. The global recession of the 1970s made living conditions for Kenyans worse. Numerous issues have impacted Kenya's economy, such as price fluctuations, famine and drought, population expansion, rising debt, illness, the dissolution of the east African community, high rates of urbanization, and ignorance. Although the 1980s and 1981 SAP implementation had a favorable effect, the economy's performance remains hindered by budget deficits, declining import and export, and an average real GDP that is less than 4.2%. In order to improve the performance of the financial sector, the Kenyan government changed its fiscal policy, which has led to higher economic growth during the past ten years. But the unrest following the 2007–2008 election has stopped the economy from growing.

Omankhanlen (2012) looked into how commercial banks contribute to capital accumulation and economic expansion. The effect of Deposit Money banks' credit on investment in Nigeria was examined by Ali et al. (2016). The findings demonstrated that interest rates, credit, and total deposit money banks all significantly and favorably affect investment. This implies that in order to promote sustainable growth, nations should expand their banking industries in a way that finances a range of economic endeavors. Gbenga and Adeleke (2013) examined the connection

between gross capital formation, economic growth, and savings in Nigeria from 1975 to 2008. Okaro (2016) examined how Nigeria's economic development and growth were impacted by the loans provided by deposit money banks. The study discovered a positive correlation between capital formation and growth, as well as an effect on the gross domestic product when the two variables are combined.

According to empirical data from 29 sub-Saharan African nations provided by Ibrahim and Alagidede (2017), over the threshold levels of financial development, human capital, and per capita income influence the relationship between financial development and economic growth. In his analysis of Vietnam's finance-growth relationship, Tran (2008) demonstrates the beneficial relationship between financial development and economic expansion.

2.2.3 Ethiopia's Economic Growth and Capital Accumulation: The Role of Banks

The bank of Abyssinia, which was held by the Ethiopian government in collaboration with the national bank of Egypt under British administration, opened its doors in 1905, marking the beginning of the modern banking system. Nonetheless, 1940 saw the emergence of well-organized banking systems (Gashayia and Singh, 2016). Furthermore, the state bank of Ethiopia, a government-owned institution, was founded in 1942. Up until it was nationalized and combined into a single government-owned mono-bank in 1976, a number of foreign bank branches and private banks were functioning in rivalry with the government-owned commercial bank at this time. The command system, which spans the years 2016–2021, under the Derg regime, effectively curbed the competitive banking scenario (Gashayia and Singh, 2016).

Here, the term "pre-reform period" refers to the Dreg dictatorship, which lasted from 1974 to 1991. All private banks were nationalized at this time, and the Ethiopian national bank now sits at the top of the banking hierarchy and performs all central bank functions. During this period, HSB (CBB), AIB (DBE), and CBE were all operational. The Ethiopian Insurance Corporation (EIC) and the Pension and Social Security Authority (PSSA) were two other financial institutions. In contrast to the majority of nations, Ethiopia has approached the liberalization of its banking sector with caution and alertness. Financial institutions in the socialist states or Derg regions essentially carried out the economic plans that were specified by the central planning organization. Since it was thought that the national plan would control and guide the actions of the financial institutions, regulation and supervision were not considered crucial at the time.

Moreover, financial institutions were instructed to fund certain public initiatives that would not pass a thorough financial analysis for the simple reason that they were motivated by ideology or merit (Alemayehu, 2006).

Ethiopia's financial sector primarily supported the state, the government, and the growth of the socialized sector between 1974 and 1990. According to Abdi (2000), the classical demonstration/manifestation of a self-aware financial system is shown by the nationalization of the private sector, restrictions on the credit system, and control over the interest rates on loans and savings. During this time, the public sector's inefficient use of resources hindered the financial sector's growth and intermediation, and the financial sector's success came at the expense of the private sector.

Following the fall of the Derg regime in 1991, a market-oriented economic system was put into place, and there was a clear shift in economic policy from the prior socialist system. The financial sector's performance saw a significant shift as a result of the recent regulatory reform. This supports the emerging private finance sector's emergency. Ethiopia has been pursuing financial liberalization since 1992. Policymakers eliminate restrictions to some extent but not completely, and the Ethiopian government currently has policies that are favorable to attracting foreign direct investment (FDI). Nonetheless, enterprises in the commercial, financial, and service sectors exclusively provided protection and services for Ethiopian citizens.

There are 38 microfinance institutions as of the end of 2018–19. Microfinance Institutions (MFIs) have demonstrated impressive overall success, as seen by the growth in both their total capital and total assets. The total capital and total asset of the sector experienced a notable increase of 20.3% and 24.1%, respectively, reaching Birr 16.6 billion and 83.5 billion. The MFI also demonstrates a notable increase in the mobilization of deposits and the availability of loans. In contrast to the previous year, microfinance deposits increased by about 26.1% to a total of 41.9 billion, while outstanding credit increased by 30.5% to birr 58.7 billion (NBE, 2019).

Eighteen commercial banks, two of which were state-owned and included the main commercial bank (CBE), comprised Ethiopia's banking sector, along with one state-owned development bank. These institutions made up over 70% of the country's total holdings in the banking industry.

Sixteen is a privately held company. The banking industry has an excellent profitability ratio and

an impressively low non-performing loan ratio, but because public sector banks dominate the market, financial intermediation and economic growth are undoubtedly constrained. In comparison, the banking system in peer nations that are regional and global has a far higher private sector share and foreign participation (Keatinge, 2014).

The population to bank branch ratio consequently reached 12,000 persons per branch. Addis Ababa was home to roughly 32.7% of all bank branches worldwide. Simultaneously, the banking sector's total capital showed an annual gain of 31.7 percent, reaching Birr 199 billion.

However, the number of insurance companies stayed at 18, and after the creation of 55 new offices in 2021–2022, their branch network grew to 690. In Addis Ababa, there were roughly 55.4 percent insurance branches functioning and 86.8 percent private branches overall. Their total capital increased by 20.9 percent to Birr 13.4 billion, of which 74.8 percent was owned by private insurance companies and 25.2 percent by state-controlled insurance companies.

The impact of national saving, investment, banks' deposit mobilization, and credit financing on Ethiopia's capital formation was examined by Muluneh (2015) and Vanuatu (2016). They discovered that national saving, bank credit and deposits, and real interest rates have no discernible effects on capital production, but bank investments and deposits do.

Bekana, 2016) Using the VAR technique and Johnson co-integration, researchers empirically examined the relationship between Ethiopia's financial sector development and economic growth. They discovered that the long-term trend of financial development indicators was negative and inconsequential. However, government investment and openness are ultimately the main drivers of Ethiopia's economic growth. However, there is compelling evidence that, in the near term, government spending, wide money or monetization, openness, domestic credit to the private sector, and the rate of inflation are the primary drivers of economic growth. He comes to the conclusion that Ethiopia's finance sector expansion stimulates growth.

Throughout the 2011–2020 periods, the share of credit extended to the state-owned enterprise sector declined, but bank credit capital is still a significant source of outside funding. Since 2011, there has been an issue with bad debt, which has resulted in a decline in the quality of commercial banks' balance sheets and an increase in inflation. To guarantee the financial system's expansion and stability, close observation of its evolution is required.

Since 1991–1992, Ethiopian public and private banks have mobilized a consistently rising amount of deposits; the total deposit of public banks as a proportion of GDP has grown at an average rate of 23%. During the same period, the banking industry as a whole grew at an average rate of 30.6%, suggesting that public banks' performance in mobilizing deposits had a significant impact on the growth rate of the industry. Savings and investment growth rates, however, are not equal; whereas saving reached 30.1% of GDP, investment reached 26.3%. In 1991, the saving-investment gap was 0.3 percent of GDP; by 2016, it had grown to 6.1 per cent. Muluneh (2015) looked into how credit financing and bank deposit mobilization contributed to the capital formation of Ethiopia's banking sector. The study discovered that national saving, bank credit, and bank deposits all play significant roles in capital development using gross fixed capital formation as the dependent variable. Real interest rates and bank investment, however, stop having a substantial impact on capital formation. Ethiopia must establish strong collaboration between banks and all relevant government agencies in order to maintain the saving culture.

2.3 Summary and Research Gap

The theoretical literature that has been reviewed thus far indicates that sustained economic progress, the financial sector's expansion is crucial. A strong financial system is necessary for efficient deposit mobilization, resource allocation, risk management, and corporate governance in order to attain sustainable economic growth. These elements will spur innovation and capital accumulation. Others, however, argued that financial structure is important for economic growth. Advocates of the bank-based financial system, for example, claim that banks are better at finding new investments, deploying savings, and enforcing corporate control. whereas proponents of the market-based financial system contend that the market is superior at risk management and capital allocation. Regarding this, the financial service view downplays this argument and asserts that when the financial system simply offers the financial services that the economy needs at every stage of development, it fosters economic progress.

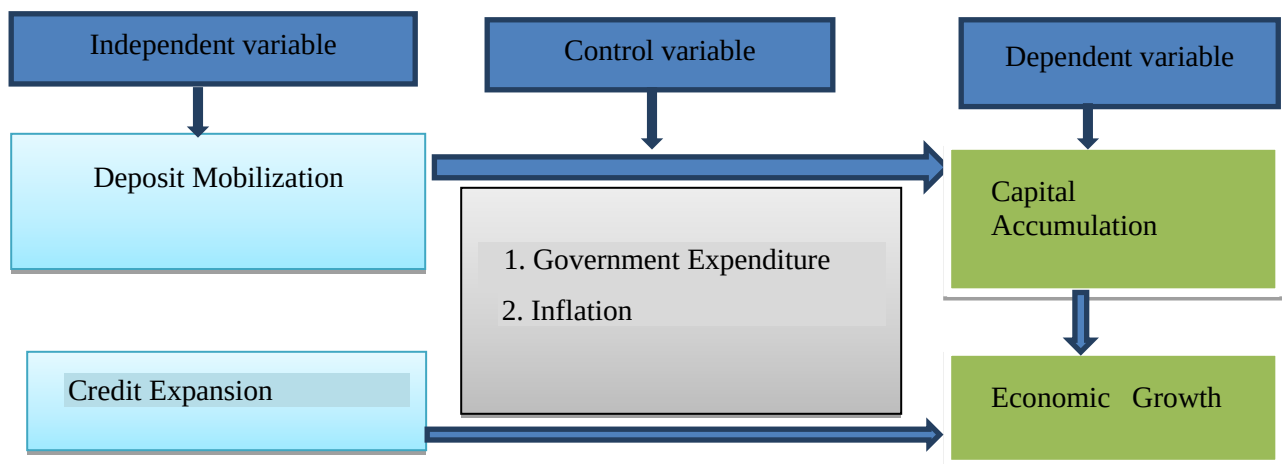
Some inconsistencies in the results of empirical research on the relationship between finance and growth may be explained by the fact that different nations have different financial systems, income levels, and other characteristics. Regarding Ethiopia's financial sector, insufficient research has been done, but in due course, advances in technology, labor, and capital accumulation will have a favorable impact on economic growth. According to recent studies, the

public is unclear about the banking industry's contribution to national development. Furthermore, there is a difference in the use of the convenient modes that have been introduced over time. Given the proliferation of banking alternatives and societal shifts in mindset, it is imperative that a timely study be carried out. Previous studies have attempted to demonstrate, using data from a variety of sources, that society should priorities investing in the use of banks and increasing capital without any actual information; therefore, this study should be educational in order to raise the nation's growth to a higher level. In order to support the aforementioned claims, this research is being done to determine the function and difficulties of the banking industry in capital accumulation and economic progress.

2.4 Conceptual Frame Work of the Research

The conceptual framework that follows was developed by the researchers to aid with comprehension of the issue, drawing from theoretical and empirical reviews that have been presented thus far.

Figure 2: Conceptual Frame Work



CHAPTER THREE

3. Methodology

This chapter's goal is to outline the research approach that was employed to examine how banks contribute to capital accumulation and economic expansion. While this section addressed model specification, the first section gave the research design that best suited the study objectives. The chapter concludes with a description of the data source, analysis, and presentation methods.

3.1. Data Source and Measurement Of Variables

As was said in the section above, quantitative data are used in the research. The secondary sources from which this information was acquired were the published reports of the National Bank of Ethiopia and the Ministry of Economic Cooperation. The main sources of macroeconomic data, such as national savings, capital accumulation, economic growth, and government spending, will be the Ministry of Economic Cooperation and the National Bank of Ethiopia (NBE). On the other hand, the NBE will be the primary source of bank-specific data such as bank credit and deposit mobilization.

Thirty private commercial banks and two state-owned banks make up the nation's banking sector. The two main state-owned commercial banks are The largest bank in Ethiopia, Commercial Bank of Ethiopia, has 60% of the assets in the banking industry, while Development Bank of Ethiopia is a specialized bank that supports medium- and long-term projects, mostly in the manufacturing and agricultural sectors. The industry's remaining segments, which comprise private commercial banks, carry out standard commercial banking operations such as extending short- and long-term credit and mobilizing savings. Based on data gathered from 1980 to 2022, the study evaluated whether or not the role played by these banks helps to the nation's capital accumulation and economic progress.

Measurement of variables

Here is an explanation of the variables utilized in the research, along with their description and measurement. Economic growth is a macroeconomic indicator of the value of economic output that has been adjusted for price fluctuations (i.e., inflation or deflation), as expressed by Real GDP (RGDP). While GDP represents total output, its main utility lies in its close approximation of total spending, which includes consumer spending, business investment, the surplus of exports

over imports, and government spending. Macroeconomics and national accounts data both use the economic concept of capital accumulation, which is determined by gross capital formation. That is to say, it is a measurement of the net additions made to the physical capital stock of a country (or an economic sector) during an accounting period, or a measure of the growth in the physical capital stock as a whole.

Deposit mobilization is the total of all deposits (savings, demand, and time) gathered by the banking industry, as determined by deposits in the banking sector. Additionally, the ratio of bank deposits to GDP has a considerable and favorable influence on economic growth (Aklilu Tessema, 2016). Credit Expansion: the total amount of credit extended to all sectors of the economy by the banking sector, as measured by credit to the banking sector. Additionally, the domestic credit to GDP ratio significantly and favorably influences economic growth (Aklilu Tessema, 2016). The total of both public and private savings is known as national saving, as determined by gross national savings. In general, it is equivalent to the income of a country less government purchases and consumption. Savings gives the country the ability to invest and produce, which influences the possibility of economic expansion.

Inflation: When a nation lacks the capacity to regulate the macro environment, this indicator is utilized as a stand-in for macroeconomic instability. Inflation is a persistent rise in the average price of goods and services in an economy over a given period of time, expressed as an annual percentage increase.

Table 1: Variable, Proxy and Expected effect on gross capital formation and economic growth

No.	Variable	Description of variable	Expected Effect on GFCF and GDP
1	Real Gross Domestic Product	GDP adjusted for inflation or deflation	
2	Gross Capital Formation	GCF as percentage of GDP	Positive
3	Bank Deposit	Bank Deposit as percentage of GDP	Positive

4	Bank Credit	Bank Credit as percentage of GDP	Positive
5	Gross National Savings	National Savings as percentage of GDP	Positive
6	Government Expenditure	Government Expenditure	Positive
7	Inflation	Inflation as percentage of GDP	Positive

3.2. Research Design

The most suitable research design that the researcher is most familiar with and capable of managing will be selected. Bhattacharjee (2012), for instance, claims that while experiments are best for evaluating theories, ground theory and case studies are ideal for developing them; these examples make it clear that quantitative designs are excellent for testing theories, while qualitative designs are best for developing theories. Positivism studies are best for testing theories and hypotheses, whereas interpretive studies are best for developing theories. Therefore, the research will employ an explanatory quantitative technique among the available research designs.

A researcher using a quantitative approach employs postpositive claims for knowledge development (e.g., narrowing down to certain variables and topics, using measurements and testing ideas, thinking causally), employs investigative techniques like experiments, and collects data using preset instruments to generate statistical data (Creswell, 2002). The study that is being considered will therefore take this tack. This means that in order to test the stated hypothesis, quantitative data will be gathered over the years 1980 to 2022.

Therefore, a well-designed quantitative technique has the advantage of making findings reliable and lessening the impact of researcher and subject biases, especially when the research purpose is to analyze the problems and function of the banking sector in capital accumulation and economic progress. Notwithstanding these benefits, quantitative research design has drawbacks as well: it lacks design flexibility, standardization might impede the use of novel ideas, and it does not provide an interpretive or exploratory analysis of a research problem (Creswell, 2003). Since secondary data is the main source of information for this study, documentary evidence

serves as the instrument of data collection. This indicates that secondary sources of data will form the basis of the investigation. We will make use of the annual time series data spanning from 1980 to 2022. Time series data are gathered from the Ministry of Finance (MoF), the World Development Indicator (WDI), the National Bank of Ethiopia (NBE), the Central Statistical Authority (CSA), and the annual report and statistical bulletin of the NBE. The study's chosen area is determined by the 17 banks that are currently in operation in the nation. However, I will be concentrating on the section of the National Bank of Ethiopia's annual report covering the 43-year period (1980–2022). Thus, the focus is on two state banks (CBB and CBE), with the remaining private commercial banks.

Table 2: The established year of Bank Sector

NO	Name of Banks	Year of Establishment
1	CBE	1963
2	AIB	1994
3	DB	1995
4	BOA	1996
5	WB	1997
6	UB	1998
7	NIB	1999
8	LIB	2006
9	OIB	2008
10	BIB	2009
11	ZB	2009
12	BrIB	2010
13	CBO	2005
14	AB	2010
15	AIB	2011
16	DGB	2012
17	EB	2013

Source-National Bank of Ethiopia 2022

3.3. Model Specification

When one cointegrating vector exists, Johansen and Juselius (1990) cointegration procedure cannot be applied. Hence, it become imperative to explore Pescara and Shin (1995) and Pesaran et al (1996b) proposed Autoregressive Distributed Lag (ARDL) approach to cointegration or

bound procedure for a long-run relationship, irrespective of whether the underlying variables are $I(0)$, $I(1)$ or a combination of both. In such situation, the application of ARDL approach to cointegration will give realistic and efficient estimates. The financial sector's roles in resource allocation, risk management, corporate control, saving mobilization, and trading theoretically foster fixed capital accumulation and technological innovation, both of which are predicted to contribute to economic growth (Robinson, Levine and Theil 1952,1997 & 2001). Therefore, using Ethiopia as a case study, the study will examine two crucial functions of the financial sector, notably the banking sector, and determine if these functions have a major impact on capital accumulation and long-term economic growth. The study requires to employ models that are somewhat modified from (Alex EhimareOmankhanlen, 2012) in order to do this.

The ADRL (p, q) model specification:

$$F(L)y_t = \phi + \theta(L)x_t + u_t,$$

Where:

Φ is Constant

Θ is Coefficient

L is a lag operator

Y is a dependent variable

X is a explanatory variable

T is indicate time

Model 1: $GCF = f(\text{Bank Deposit, Bank Credit, Gross National Saving, Government Expenditure, and Inflation})$

$$\ln GCF = \beta_0 + \beta_1 \ln BD_t + \beta_2 \ln BC_t + \beta_3 \ln GNSt + \beta_4 \ln GEXPt + \beta_5 \ln INF_t + \epsilon_t$$

..... (1)

Model 2: $GDP = f(\text{Bank Deposit, Bank Credit, Gross Capital Formation, Gross National Saving, Government Expenditure, and Inflation})$

$$\ln RGDP = \beta_0 + \beta_1 \ln BD_t + \beta_2 \ln BC_t + \beta_3 \ln GCF_t + \beta_4 \ln GNSt + \beta_5 \ln GEXPt + \beta_5 \ln INF_t + \epsilon_t$$

..... (2)

Where:

β_0 = intercept,

β_1 - β_6 = coefficient of independent variables, and ε = error term

3.4. Method of Data Analysis

Prior to analysis, time series data that were gathered between 1980 and 2022 were analyzed to determine whether any special or exceptional treatments were needed for the data. Next, a regression analysis using the ARDL method of co-integration was carried out. Because a decision made by a company in a given year might have an impact on future periods, such $t + 1$, $t + 2$, and so on, as well as the organization's economic growth and brand image in the time t . Consequently, a distributed lag model plays a part in the scenario due to the behavioral effects of a variable, both short- and long-term, on other variables. Diagnostic tests, such as those for stability, co-integration, and model accuracy, as well as other econometric assumption tests like multicollinearity, heteroskedasticity, and autocorrelation, are used to check for violations of important assumptions related to time series data.

The financial sector and policies in Ethiopia have developed over three stylized phases: financial repression during the socialist regime, which was followed by market-led development through deregulation and liberalization; financial inclusion through the admission of private banks and MFIs; and third, market-led development through liberalization and deregulation following 1991. In particular because three structural changes were covered over the study period, the model accuracy test is essential to this investigation. With the issuance of Proclamations No. 84/1994, which permitted the private sector to participate in banking and insurance, and No. 40/1996, which allowing the establishment of MFIs. These proclamations also created the possibility of an inclusive financial sector in Ethiopia. possessing divergent economic ideologies. Furthermore, structural alterations may expose time series data to one or more structural fractures. Additionally, the dependent and independent variables are used to test the accuracy of the ARDL model. The economic phenomenon we wish to describe is represented by the dependent variable, and the factors that could have an impact on the dependent variable are represented by the independent variables. To prevent misleading regression, it is crucial to confirm that the variables are stationary or integrated of the same order. As a result, the study applied the Brown, Durbin, and Evans (1975) cumulative sum (CUSUM) and cumulative sum of squared

(CUSUMSQ) approaches.

3.4.1 Stationary or Non Stationary Test

The research uses a unit root test to determine the quantity of stationary. Because the study uses time series data that is based on the stationary of the underlying time series, a test of stationary becomes necessary in order to extrapolate the research's conclusions beyond the underlying time period. The Phillips and Perron (PP) and Augmented Dickey-Fuller (ADF) tests are used to conduct a stationary test in order to avoid inaccurate regressions (Brooks, 2008).

H0: Variable has unit root or variables not stationary

H1: Variable does not have a unit root or variable is stationary

If the P-value is less than 5%, the null hypothesis should be rejected in order to ascertain if the variable is stationary or has a unit root. A stationary time series is one whose statistical characteristics, such as the mean, variance, and auto-correlation, are constant over time in order to obtain meaningful statistics and/or avoid incorrect regression. Unit root tests are essential to ascertain whether the variable is integrated process of order two (i.e., $I(2)$) in order to calculate their order of integration and apply the appropriate measure of co-integration (Asteriou, 2006).

3.4.2 Co-Integration Analysis

A set of variables is considered co-integrated if at least one linear combination of them is and the variables are independently integrated of the same order. This suggests that the variables may have an equilibrium connection over the long term. Cointegration tests find long-term, stable links between groups of variables. However, Rao (2007) notes that if the test fails to find such a relationship, it isn't proof that one doesn't exist it only *suggests* that one doesn't exist.

Three of the most popular tests are:

1. Engle-Granger
2. Johansen test
3. Autoregressive Distributed Lag (ARDL).

3.4.2.1 Engle-Granger Approach

This co-integration test is based on residuals. We must first ensure that the level of integration is the same order in order to apply this strategy. Next, we can use the co-integration test and

ordinary least square to estimate the coefficients. Secondly, we can create an ECM in which the residual from the co-integrating relationship lagged by one time period serves as the error correction term. The rate at which the short-run equilibrium changed during the current year is expressed by the error correction term. However, the approach has two serious flaws. One, there might be more than one co-integrating vector if there are more than two variables. On the other hand, the static regression is used by the Engle-Granger technique to first create residuals, or mistakes. To find out if there are unit roots in the residuals, do the ADF test or a similar one. In the event that the time series is cointegrated, the residuals will be nearly stationary. A significant problem with the Engle-Granger approach is that various findings might be drawn depending on the dependent variable chosen (Armstrong, 2001); however, more recent tests have addressed this issue.

3.4.2.2. Johansen Maximum Likelihood

To address some of the drawbacks of the aforementioned approach, the Johansen method of co-integration was developed. This indicates that if the data set includes more than two time-related variables, the approach can estimate multiple co-integration relationships. However, the Johansen technique will not be effective when the underlying explanatory variables have many orders of integration, particularly if some of the variables are $I(0)$ (Pesaran, Shin, and Smith, 2001). This is because Johansen co-integration techniques cannot function unless all of the system's variables have equal orders of integration. This implies that when $I(0)$ variables are present in the system, the trace and maximum Eigen value tests may result in erroneous co-integrating interactions with other variables in the model (Harris, 1999).

3.4.2.3 Autoregressive Distributed Lag (ARDL) Model

The ARDL model is an attempt to address the aforementioned issues. This is due to the fact that the model is applicable regardless of the integration order. This basically means that the autoregressive distributive lag model (ARDL) and bound testing techniques may be used to extract both long-run and short-run correlations; Verifying that none of the variables or series we are working with are $I(2)$ is the sole task remaining to complete. Pesaran and Shin (1999) and Pesaran et al. (2001) created this method in an effort to provide some advantages over more typical cointegration tests, such as the Johansen co-integration test, which are limited to variables with the same degree of integration. such as $I(1)$. When using a combination of $I(0)$ and $I(1)$

variables, the ARDL model allows for the use of various lag-lengths when the variables enter the model. Furthermore, the model performs comparatively better when the sample sizes are small and finite.

To estimate the long-run relationship, the ARDL model employed a two-step process. The long-run and short-run dynamics of the variables are estimated in the second phase after determining whether there is a long-run relationship between the variables. But only until the first stage is completed that is, until the long-term relationship's existence is verified is the second step carried out. As a result, Pesaran and Shin (1997, 1999) as well as Pesaran, Shin, and Smith (2001) have presented the ARDL model that is described below.

$$\begin{aligned} \Delta \ln RGDP = & \theta_0 + \lambda_1 \ln GCF_{t-1} + \lambda_2 \ln BD_{t-1} + \lambda_3 \ln BC_{t-1} + \lambda_4 \ln GNS_{t-1} + \lambda_5 \ln GEXP_{t-1} + \\ & \lambda_6 \ln INF_{t-1} + \sum_{i=1}^k \delta_{1i} \Delta \ln GCF_{t-i} + \sum_{i=1}^k \delta_{2i} \Delta \ln BD_{t-i} + \sum_{i=1}^k \delta_{3i} \Delta \ln BC_{t-i} + \\ & \sum_{i=1}^k \delta_{4i} \Delta \ln GNS_{t-i} + \sum_{i=1}^k \delta_{5i} \Delta \ln EP_{t-i} + \sum_{i=1}^k \delta_{6i} \ln INF_{t-i} + \epsilon_{t-1} \dots \dots \dots \end{aligned} \quad \mathbf{3}$$

Where: Δ =difference

θ_0 = intercept,

λ_1 - λ_6 = coefficient of long-run variables,

δ_{1i} - δ_{6i} =coefficient of short-run variable

ϵ = error Term

Based on these models the following hypothesis is tested:

H0: Variables are not co-integrated/have no long-run relationship.

H1: Variables are co-integrated/have long-run relationship.

The Wald test or F-statistic is used to determine whether to reject or not reject the null hypothesis. Two essential values are provided in this regard by (Pesaran, Shin, & Smith, 2001): $I(0)$ is the lower bound while $I(1)$ is the upper bound. If the Wald test or F-statistic is less than $I(0)$, this leads to the conclusion that there is no co-integration among the variables being examined. If the F-statistic value is greater than the upper critical value, $I(1)$, we can reject the null hypothesis that there is no co-integration. This suggests that the factors have a lasting association.

The next step is to determine a stable long-run model using the following model, once the long-run relationship between the variables has been verified using the above model. The ARDL model is the one we'll use because it's essential for doing economic scenario analysis. Any change in one economic variable in an economy has the potential to affect other economic variables in the future.

$$\text{LnRGDP} = \theta_0 + \lambda_1 \text{LnGCF}_{t-1} + \lambda_2 \text{LnBD}_{t-1} + \lambda_3 \text{LnBC}_{t-1} + \lambda_4 \text{LnGNS}_{t-1} + \lambda_5 \text{LnGEXP}_{t-1} + \lambda_6 \text{LnINF}_{t-1} + \epsilon_t \dots \dots \dots 4$$

3.4.3 Short-Run Dynamics and error Correction Model

If the outcome of the previously mentioned model confirms the presence of a long-run relationship between the dependent and explanatory variables and indicates the coefficient of a stable long-run model, we can measure the short-run coefficients in addition to the error correction term (ECT). To this end, the Vector Error Correction Model (VECM) that follows was specified.

$$\Delta \text{LnRGDP} = \alpha_0 + \sum_{i=1}^k \delta_{1i} \Delta \text{LnGCF}_{t-i} + \sum_{i=1}^k \delta_{2i} \Delta \text{LnGBD}_{t-i} + \sum_{i=1}^k \delta_{3i} \Delta \text{LnBC}_{t-i} + \sum_{i=1}^k \delta_{4i} \Delta \text{LnGNS}_{t-i} + \sum_{i=1}^k \delta_{5i} \Delta \text{LnGEXP}_{t-i} + \sum_{i=1}^k \delta_{6i} \Delta \text{LnINF}_{t-i} + \delta_7 \text{ECT}_{t-1} + \epsilon_t \dots \dots \dots 5$$

Where:

ECT _(t-i) = Error Correction Term lagged by one period,

k = represent the optimal lag length of each variable in the ARDL process.

The related long-run model, whose coefficients are produced by normalizing the equation, is where the error correction term in this case originates. To determine the dependability of the coefficients, diagnostic and model stability tests are performed for each of the aforementioned models.

3.4.4 Granger Causality Test

Finding the causality's direction has been the primary source of difficulty for earlier Ethiopian research projects. Granger-causality testing can be used in a VECM (which has short-run and long-run components) that assumes all the data are stationary by either integration or

differencing transformations if the variables are no stationary and cointegrated. In order to determine the direction of causation between the role of the banking sector, capital accumulation, and economic growth, the study conducts pairwise Granger non-causality tests. This made it possible for the study to ascertain whether finance drives economic expansion or just follows it. By estimating the given VAR model, the lack of Granger causality is tested.

$$\Delta Y_t = \sum_{i=1}^n \alpha_i \Delta Y_{t-i} + \sum_{j=1}^n \beta_j \Delta X_{t-j} + u_{1t}$$

$$\Delta X_t = \sum_{i=1}^n \delta_i \Delta X_{t-i} + \sum_{j=1}^n \delta_j \Delta Y_{t-j} + u_{2t}$$

Null hypothesis: $H_0: \alpha = 0$ is the test that does not granger causes

Alternative hypothesis: $H_1: \alpha \neq 0$ is the test that does granger causes

Granger causality between the variables is demonstrated by the fact that the null hypothesis was rejected in each case. The Granger-causality test typically yields four alternative results:

CHAPTER FOUR

4. DATA ANALYSIS

4.1 Descriptive Statistics

It is important to talk about the descriptive statistics of the research variables before moving on to the econometric analysis. Table 3 provides a summary of the descriptive statistics for the following variables: three control variables (government, inflation, and gross national savings), two explanatory variables (banking sector deposit and credit), and two dependent variables (economic growth and gross capital formation). The descriptive statistics contain the mean, median, maximum, minimum, and standard deviation of the variables utilised in the study for the years 1980 to 2022.

Table 3: Summary of Descriptive Statistics

variable	Observation	Mean	Std. Dev.	Minimum	Maximum
Lnrgdpr	43	1.57314	1.194686	-2.995732	2.575661
Lngcf	43	10.43799	1.810507	7.113956	13.83214
Lnbsd	43	13.10827	2.140597	9.633121	16.29007
Lnbsc	43	9.041976	1.91556	6.298766	12.56264
Lngns	43	10.96186	1.627011	9.359536	14.24267
Lngxp	43	9.755633	1.811054	7.435261	13.21287
Nif	43	10.390767	13.6072	-11.8	55.2

Source: Authors computation using stata

The table shows that the real GDP has a mean value of 1.57%, a minimum value of -2.99%, a maximum value of 2.57%, and a standard deviation of 1.19%, which suggests that there is more variety in economic growth. The average Gross Capital Accumulation is 10.43%, which is nearly equal to the bare minimum needed for long-term economic expansion. In terms of the bank-

related variable, the quantity of credit extended by the economy's banking sector as a percentage of real GDP yields an average, minimum, and maximum value of banking sector deposits of 13.10%, 9.63%, and 16.3 correspondingly. A highest value of variance in mobilising deposit was present during the time, as showed by the combining standard deviation of 2.14%. Based on the ratio of total credit granted by Ethiopian banks to real GDP, the average, minimum, and maximum credit values are 9.04%, 6.29%, and 12.56%, respectively. Three control variables are used in the research: inflation, government expenditure, and gross national savings. In relation to real GDP, the mean, minimum, and maximum values of gross national savings are, respectively, 10.96%, 9.36%, and 14.24%. Government expenditure ranges from a minimum of 7.45% to a maximum of 13.215 percent of GDP, with an average of 9.75%. As an alternative, the consumers price index indicates an average rate of inflation of 10.39%. There is a minimum inflation rate of -11.82% and a maximum inflation rate of 55.2%. Significant volatility has been knowledgeable by the macroeconomy, as indicated by the standard deviation of 13.6%.

4.2 Stationary and Non-Stationary Test/Unit Root Test

It is necessary to confirm that all variables are stationary in order to ascertain their order of integration and ensure that the variables are not incorporated of order two $I(2)$ before moving on to the ARDL/BOUND test. In order for the research to apply the proper procedure for measuring co-integration, a unit root test is completed to ascertain the level of stationary or to confirm whether a unit root exists. This is because not present of a stationary series results in an inappropriate statistical result and deceptive inference. For this, three opportunities are taken into consideration: the first with an intercept and no trend (I), the second with both an intercept and a trend (II), and the third with neither an intercept nor a trend (N). The traditional augmented Dickey-Fuller (ADF) test and the Philip-Peron (PP) test are employed for this. (See Table 4)

Table 4: ADF (Augmented Dickey-Fuller test) and PP (Phillips-Perron test) unit root tests

Variables of Interest	ADF-I		ADF-IT		ADF-N		PP-I		PP-IT		PP-N		Decision
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	
LnRGD	1.00	0.00	0.97	0.00	1.00	0.48	1.00	0.00	0.98	0.00	1.00	0.01	I(1)
LnGCF	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I(0)

LnDEP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I(0)
LnCR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I(0)
LnGNS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I(0)
LnGEXP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	I(0)
INF	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	I(1)

Source: Authors computation using stata

Note: When checking if all variables are stationary using ADF, the lag time frame is decided using the Schwarz information criterion (SIC). The MacKinnon (1996) critical value serves as the foundation for rejecting the null hypothesis.

The test's outcome discloses that all variables, with the exception of the inflation and GDP rates, are stationary at level I(0). However, the two variables are not stationary at all for any alternative or technique; instead, they become stationary at their first difference, I(1). The following items need specific attention since they are stationary at level I(0): gross capital accumulation, government spending, banking sector credit, deposits, and gross national saving. The implementation of the ARDL strategy, which has a special advantage over the conventional co-integration analysis method, is required when there are mixed level stationary variables, such as I(0) and (1). Thus, this is one of the primary disputes in favour of using the ARDL or Bound test technique to co-integration assessment, among other disputes.

4.3. Ardl/Bound Test of Co-Integration for Capital Accumulation

The long-run model presented in equation (3) of chapter three is evaluated using the proper lag length, which is chosen based on lag selection criteria, as the first step in the ARDL approach to co-integration. The research in this case employs the lag order of one, as advised by several lag selection criteria, such as the Hannan-Quinn information (HQ), the Schwarz information criterion (SC), the Akaike information criteria (AIC), and others. The Wald-test is then used to assemble whether co-integration or long-run relationships between variables exist, as well as to assess the joint significance of long-run coefficients. Limitations on the estimated long-run coefficient of gross capital formation are used to achieve this. Government spending gross

national savings, banking sector credit, and banking sector deposit. The wald-test's F-statistic value was then contrasted with Pesaran et al. (2001)'s lower and upper bound critical values for an unrestricted intercept and no trend. (Refer to Table 5)

Table 5:Wald test statistics

Description		At 5% level	
Lower Bound, I(0)		Upper Bound, I(1)	
Pesaran et al.(2001)critical value for K =6	2.12		3.23
Research output Wald F-statistic for K=6		13.649	

Source: Author's computation using Stata

Table 5 demonstrates that the computed value of the F-statistic (i.e., 13.649) is greater than the upper bound value (i.e., 3.23) reported by Pesaran et al. (2001) at the 5% level of significance. The null hypothesis, which states that there is no co-integration between the variables, is thus disproved. This suggests that the dependent and explanatory variables gross capital formation, government spending, banking sector credit, deposits, and gross national saving have a statistically significant long-term relationship. Two sets of statistical tests were utilized in the study to estimate the performance of the ARDL model. To estimate the long-run coefficient and short-run dynamics, the ARDL model's performance must now be assessed using the subsequent diagnostic test.

Table 6: Long-run diagnostic tests

Description	probability
Test of Jarque-Bera Normalcy:	0.6549
LM Test for Breusch-Godfrey Serial Correlation	0.2302

Breusch-Pagan-Godfrey Test	Heteroskedasticity	0.0973
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Source: Author's computation using stata

Table 6 above illustrates that there isn't any statistical proof that statistical issues exist. Thus, rather than being serially correlated, errors are regularly distributed. Furthermore, the issue of heteroskedasticity does not exist. To ensure that the equation is accurately defined and the model is stable, the study also used the cumulative sum of recursive residuals (CUSUM) and cumulative sum of square of recursive residuals (CUSUMQ) model stability tests in addition to the diagnostic test mentioned above. The absence of structural instability in the model during the sample period is confirmed by the CUSUM and CUSUMQ tests. so that the determination of the presence of a long-term relationship between gross capital creation, government spending, gross national saving, banking sector deposit and credit, and inflation may be trusted.

4.3.1. Long-term capital accumulation coefficient estimates

We may now estimate the coefficient of long-run relationships, which was given in equation (5) of chapter 3, after determining that co-integration exists. The following report presents the empirical conclusion of the bound test approach for the long-run relationship, normalised for gross capital formation (LnGCF) (see Table 7).

Table 7: Estimated long-run coefficients using ARDL (1, 1, 0,0,0,2)

Dependent Variable: LnGCF				
Explanatory variables	coefficient	Std.error	t-statistic	P-value
LnGCF(-1)	-0.7183112	0.1838267	-3.91	0.00
LnBSD(-1)	0.9400871	0.0558225	16.84	0.00
LnBSC	0.3348886	0.1558924	2.15	0.040
LnGNS	-0.2487714	0.2652363	-0.94	0.356

LnGEXP	0.1749532	0.2602422	0.67	0.507
INF(-2)	0.0047871	0.012815	0.37	0.711

Source: author's computation using state

The Long-Term Effects of the Banking Industry on Capital Accumulation

Deposits in the banking sector: according to the t-statistic, the hypothesis is supported by the positive and statistically significant impact of deposits on the nation's gross capital accumulation. With a coefficient of 0.94008, the results of a regression analysis Making use of the ARDL approach show that deposits have a significantly favorable impact on the country's capital accumulation. This suggests that a 1% increase in deposits will, over time; result in an approximate 0.94% rise in gross capital formation, holding other factors constant. At the 1% level of significance, the investigation is able to reject the null hypothesis that there is no effect thanks to the p-value of 0.000.

This result is in line with earlier research. (2012) Nwaeze et al. Venkati (2016) and Muluneh (2015).For example. According to reports, a larger bank deposit will increase the availability of investment funds, which will boost the economy's productivity and capital formation development. However, the banking industry might not be able to produce the amount of deposits needed by the economy to accumulate capital. This is a prerequisite for development

Banking Sector Credit: The results of a regression analysis using the ARDL approach show that credit has a significantly and positively positive impact on the country's capital accumulation, with p-value of 0.040. Based on the t-statistic, this effect of credit on capital formation is positive and statistically significant, which is consistent with the hypothesis. Consequently, the study is unable to disprove the null hypothesis, which states that there is no long-term correlation between capital production and lending to the banking sector. The loan that commercial banks provided to the economy appears to have a major impact on capital formation, despite its favorable effects.

This result contradicts the observations made by Levine (1996). They contend that the financial system can accurately forecast future rates of economic growth, capital accumulation, and technical advancement all of which are necessary conditions for sustained economic progress. But the financial sector plays a crucial role if it can influence the rate of capital accumulation

which may be the case for us either by altering the rate at which people save or by redistributing savings among technologies that produce capital.

The long-term effects of inflation, government spending, and national savings on capital accumulation

Gross National Savings: With regard to the control variable, the study is unable to disprove the null hypothesis, which states that there is no significant long-term correlation between gross national savings and gross capital formation. Accordingly, Gebeyehu (2010) finds no statistically significant causal relationship between investment and savings in either way. Cyrille (2010) found that national reserve had no noticeable effect on investment when examining the causal relationship using data from 15 Sub-Saharan African nations. The same as, Cooray and Sinba (2005) found no correlation between saving and investment in twenty SSA countries, including Ethiopia.

Government Expenditure: The research rejects the null hypothesis that, at a 1% significance level, government expenditure has a positive and significant impact on gross capital formation, in contrast to national saving. The importance of government in many economic areas cannot be overstated, even when the coefficient seems exaggerated. One potential explanation for this abnormal sector in capital accumulation and economic growth is still in its newborn, according to Perkovski and Kjosevski (2014). Consequently, the need for government action arises.

Inflation: Regarding inflation, the study found that it had a significant and favorable impact on the country's capital formation, rejecting the null hypothesis of effect at 10%. However, because of its smaller coefficient (0.0047871), the impact is insignificant; that is, a 1% increase in inflation only results in a 0.47% increase in the nation's capital formation. One explanation for this could be because, although the rate increased to 0.47% in 2009 due mostly to food goods that have a greater impact on societal well-being than the macroeconomic situation, inflation was still relatively low until 2002–2003 (Abel, 2016).

4.3.2. Short-Run Capital Accumulation Error Correction Model:

Once co-integration and its long-run equation for gross capital production have been accepted, it is now time to calculate the error correction term, which provides crucial information regarding the rate of adjustment towards long-run equilibrium (see Table 8).

Table 8: Estimated short-run coefficient using ARDL (1,1,2,2,2,2)

Dependent variable: D(LnGCF)				
Variable	Coefficient	Std. error	t-Statistic	Prob.
constant	-3.235408	0.6161103	-5.25	0.000
D(LnGCF(-1))	-1.017715	0.1587556	-6.41	0.000
D(LnBSD(-1))	-0.650337	0.1573829	-0.41	0.683
D(LnBSC(-1))	-0.6615744	0.1492434	-4.43	0.000
D(LnGNS(-1))	0.403998	0.1726116	2.34	0.028
D(LnGEXP(-1))	0.5463017	0.2357591	2,32	0.029
INF(-1)	-0.0026181	0.0026376	-0.99	0.331
ECT(-1)	-0.606066	0.260976	-2,322	0.0287

Source: author's computation using stata

Table 8 shows that the error correction term is statistically significant and negative.

Because of the negative coefficient, 60.61% of the shocks from the previous period will be adjusted in the present period to bring the system closer to the long-run equilibrium. This indicates that the adjustment process took less than a year and a half to complete. The higher rate (i.e., 60.61%) further confirms a stable long-term link between capital accumulation and the explanatory variables (bank deposits and credit, national saving, government spending, and inflation).

The short-term effects of the banking sector's involvement in accumulation

Banking Sector Deposit: Unlike its long-term impact, saving mobilization has a negative impact on gross capital formation that is substantial. With a coefficient of 0.650337 and a p-value of 0.683, the regression analysis's results show that deposits have a significantly negative impact on the country's capital accumulation. This suggests that, in regular situations , a 1% increase in deposit will result in a 0.65% reduction in capital accumulation in the near term. The study may

reject the null hypothesis that there is no effect at the 1% level of significance thanks to the p-value of 0.683.

Banking Sector Credit: In contrast to its long-term impact, banks' participation in credit growth has a major detrimental effect on capital accumulation. With a coefficient of 0.6615 and a p-value of 0.000, the results of the regression analysis demonstrate that credit has a considerably negative impact on the country's capital accumulation. This suggests that a 1% increase in deposit will, in the short term; result in a 0.1948% decline in capital formation, keeping other variables constant. At the 1% significance level, the investigation is able to reject the null hypothesis that there is no impact thanks to the p-value of 0.000.

The short-run impact of National Saving, Government Expenditure & Inflation on Capital Accumulation

Gross National saving: In contrast to its long-term impact, gross national saving has a major favorable impact on capital development in the nation.as demonstrated by the regression analysis's results. Credit has a 0.0000 p-value and a coefficient of 0.5359, which indicates a considerably favorable effect on the country's capital accumulation. This suggests that, assuming everything else stays the same, a 1% rise in gross national saving will result in a short-term increase in capital creation of roughly 0.5359.At the 1% level of significance, the investigation is able to reject the null hypothesis thanks to the p-value of (0.0000).

Government expenditure: Government spending, in contrast to its long-term effect, has a notably beneficial impact on the nation's capital formation. Regression analysis shows that, with a coefficient of 0.2812, government spending has a statistically beneficial and favorable impact on capital formation. This suggests that, in the short term, a 1% increase in government spending will result in an approximately 0.2812% rise in capital creation, holding other factors constant. The investigation is able to reject the null hypothesis at the 10% significance level thanks to the p-value of (0.0842).

Inflation: inflation has a major detrimental influence on capital formation. Regression analysis results show that inflation has a statistically significant, positive impact on capital formation, with a coefficient of (-0.00262).This suggests that a 1% increase in inflation will, in the short term; result in a 0.26% decline in capital formation, holding other factors constant. At the 5%

level of significance, the investigation is able to reject the null hypothesis thanks to the P-value of 0.331.

4.3.3. Examining the Short-run Error Correction Model Estimates Diagnostically

A diagnostic test is run to see whether the short-run model is reliable, much as we did with the long-run model. The model used to estimate the short-run coefficients is free of statistical issues, as shown in Table 9 below. This indicates that there is no heteroskedasticity issue, the errors are normally distributed, and there is no serial correlation.

Table 9: short-run diagnostic test

Description	Probability
Jarque-BeraNormality test	0.2764
Breusch-Godfrey serial correlation Lm	0.1906
Breusch-Pagan-Godfrey Heteroskedasticity	0.3286

Source: author's computation using stata

Table 9 above illustrates how the research is unable to reject three null hypotheses at the 5% level of significance, indicating that the error terms are normally distributed, not serially correlated, and heteroskedasticity is not an issue. As advised by Pesaran et al. (2001), a model stability test is carried out in addition to the diagnostic test mentioned above to ensure that the short-run coefficients are exhibit reliability and efficacy. This test uses the cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive (CUSUMQ). They are dependable and effective. These tests also verify that the model did not experience structural instability throughout the duration of the sample. in order to ensure the validity of the conclusion drawn regarding the presence of a long-term relationship between the dependent and explanatory variables.

4.4. Ardl Bound Test of Co-Integration for Economic Growth

The estimation of the long run model for economic development given in equation (4) with the proper lag, which is chosen, based on the lag length selection criterion, is the first step in the

ARDL approach to co integration, similar to what we have done for gross capital creation. The study used the Akaike information criterion (AIC) and used a lag order of two. The Wald test is then used to ascertain if co-integration exists and to assess the combined significance of long-run coefficients. The estimated long-run coefficients of real GDP domestic product, government spending, bank sector credit and deposit, gross capital formation, and gross national saving are all limited in order to achieve this. The Wald test's F-statistic value was then compared to Pesaran et al. (2001)'s lower and upper bound crucial values for an unrestricted intercept and no trend (see Table 9).

Table 10:Wald test statistics

Description	at 1% level		at 5% level	
	lower bound, I(0)	upper bound, I(1)	lower bound, I(0)	upper bound, I(1)
pesaran (2001) critical value for k=7	2.26	3,35	2.62	3.79
Research output Wald F-statistic for k=7			3.49	

Source: pesaran, shinand smith (2001) and Author's computation using stata

Table 10 indicates that, at the 1% level of significance, the computed value of the F-statistic (i.e., 3.49) leads the upper bound set by Pesaran et al. (2001).In other words, The banking sector's deposit and credit, economic growth, gross capital creation, gross national saving, government spending, and inflation all have a statistically significant long-run link. This exceeds to the rejection of the null hypothesis that there is no long-run relationship among the variables.

Before estimating the long-run coefficient and short-run dynamic of economic growth, as indicated by equation (4) of chapter (3), it is crucial to carry out a diagnostic test, as we did in the previous section.

Table 11: Long-Run diagnostic test

Description	probability
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Jarque-Bera Normalty Test	0.5132
Breusch-Godfrey Serial correlation LM test	0.0980
Breusch-pagan-Godfrey Heteroskedasticity test	0.3335

Source: Author's computation using stata

As Table 11 above shows, there are no numerical issues with the economic growth model. This suggests that the conclusion drawn on the statistical reliability of a long-term link between the variables of interest is backed up.

Together with these diagnostic tests, a model stability test is carried out using cumulative sum of squares of recursive residuals (CUSUM) and cumulative sum of recursive residuals. From these tests, it is possible to conclude that the model used to create the presence of a long-run relationship is robust; making assured the correctness of the conclusion drawn above. Generally speaking, the diagnostic test verifies that the model did not experience structural instability over the sample time.

4.4.1. Long –run Model Estimation for Economic Growth

We can now move on to long-run coefficient estimation because the previous discussion shows that there is a long-term relationship between the dependent variable (economic growth) and the explanatory variables (bank deposit and credit, capital accumulation, national saving, government expenditure, and inflation).

Table 12: Estimation long-run coefficients using ARDL (2, 1, 1, 0, 0, 0, 2)

Dependent Variable :LnRGDP				
Variable	Coefficient	Std,Error	t-Statistic	prob.
LnRGDP(-2)	-2.157479	0.2303729	-9.37	0.000
LnBSD(-1)	-0.8510243	0.8463765	-2,46	0.021
LnBSC(-1)	0.1075075	0.1999957	0.54	0.595

LnGNS	0.3082862	0.313301	0.98	0.334
LnGCF	0.9266094	0.3885757	2.38	0.024
LnGEXP	-0.7203724	0.3194463	-2.26	0.032
INFI(-2)	0.0440583	0.0170572	2.58	0.016

Source: Author's computation using stata

The estimation of the long-run coefficient of gross capital formation, national saving, government spending, inflation, and banks deposit is revealed in Table 12 above. Possess the predicted beneficial impact on economic growth, but given credit by the banking sector has the sole adverse effect.

The Banking Sector's Long-Term Effect on Economic Growth

Banking Sector Deposit: Deposits in the banking sector have a statistically significant and adverse impact on the nation's economic growth, according to the t-statistic. Even at the 5% threshold of significance, the p-value of (0.021) shows a considerable impact on economic growth. Previous studies' findings refute the idea that deposits have little to no influence on economic growth (Muluneh, 2015 and Venkati, 2016). Higher deposit levels, according to both researches, improve the availability of investment funds, which in turn promotes increased capital accumulation and productivity. However, the nation's banking industry might not be able to produce the amount of deposits needed by the economy to increase capital accumulation. According to Tesfaye (2014), who also supports the current findings, this shouldn't come as a surprise because financial intermediation's percentage of GDP is still in its infancy. According to the MOFED data from 2012, financial intermediation made up just 2.7% of GDP.

Banking Sector Credit: The results of regression analysis using the ARDL approach show that the positive but not statistically significant effect of credit expansion on long-run economic growth is inconsistent with the hypothesized expectation, as indicated by the t-statistic. Credit has a 0.1075 coefficient and a 0.595 p-value, which indicates that it has little impact on the country's economic growth. Thus, the study is unable to disprove the null hypothesis, which states that credit provided by the banking sector has no discernible impact on long-term

economic growth.

This result contradicts the observations made by Levine (1996). He contends that the financial sector is a reliable indicator of future rates of economic expansion and capital accumulation. However, the financial sector loses significance if it is unable to influence the rate of capital accumulation, as it is in Ethiopia, either by altering the rate of saving or by redistributing savings among technologies that produce capital. Furthermore, the financial sector only contributes to economic growth when it allocates money effectively, according to Estrada et al. (2010).

The Long-run impact of Capital Accumulation, National Saving, Government Expenditure and Inflation on Economic Growth

Capital Accumulation: At the 5% level of significance, the research rejects the null hypothesis based on the t-statistic. With a coefficient of 0.9266, this suggests that gross capital formation has a considerable impact on real economic growth. With all other things being equal, a 1% increase in gross capital formation over the long term will result in a 0.92% rise in economic growth, according to the positive coefficient of 0.92. Similar findings were reported in this regard by Tadese (2011) in Ethiopia and Biswas and Saha (2014) in India.

National saving: Based on the t-statistic, the study rejects the null hypothesis, which states that there is no significant effect at the 10% significance level. In other words, the GDP has an effect on economic expansion. The positive coefficient of 0.3082 means that, over the long term, real economic growth will improve by around 30.82% for every 1% increase in gross national saving, assuming all other factors remain constant.

Abel (2016) noted that national saving had a detrimental impact on Ethiopia's economic expansion in this aspect. The country's heavy reliance on foreign borrowing, investment, and aid to achieve its investment requirements could be one explanation for this. Stated differently, national savings do not reach a point where they can sustain economic expansion. Even though this study found that national saving had a favorable effect, it only seemed to be significant at 10%, which is not recommended by statistical analysis.

Government Expenditure: According to the t-statistic, the study was unable to disprove the null hypothesis, which states that government spending significantly affects long-term economic growth.

This suggests that government expenditure has a considerable but detrimental impact. The government's crucial role in developing countries' economic growth may be indicated by the negative coefficient, which also suggests that the financial sector's ability to finance capital accumulation and investment both necessary for the economy's higher productivity and sustainable development is constrained. Nonetheless, it was determined by King and Levine (1993) and Levine et al. (2000) that government spending considerably contributes to economic growth.

Inflation: the study's t-statistic results verify that inflation has a statistically significant and favorable impact on long-term economic growth, however the effect of inflation is rather small, as indicated by its coefficient (i.e., 0.04405). Accordingly, economic growth increases by roughly 0.04% for every 1% increase in inflation. In this sense, Abel's (2016) research and other published findings are comparable. They contend that inflation has a beneficial effect on economic growth, which is further corroborated by the Philip's curve hypothesis, which shows that a modest inflation of roughly 2% annually promotes economic growth.

4.4.2. Short-run Error Correction Model for Economic Growth.

Assuming that the long run relationship and associated gross capital formation equation are valid, it is now time to compute the error correction term, which offers crucial information on the rate of adjustment towards long-run equilibrium.

Table 13: Estimated short-run coefficients using ARDL (2 1 0 1 0 0 2 1)

Dependent Variable: D(LnRGDP)				
Variable	coefficient	Std. L is a lag operatorError	t-statistic	Prob.
C	9.241379	3.621325	2.55	0.017
LnRGDP(-2)	0.4309385	0.128022	3.37	0.002
LnBSD(-1)	1.93585	0.701464	2.76	0.010
LnBSC	0.231945	0.430654	0.54	0.595

LnGCF(-1)	-1.63271	0.713956	-2.29	0.030
LnGNS	0.665121	0.685622	0.97	0.343
LnGEXP	-1.554189	0.721218	-2.15	0.040
INF(-2)	-0.489619	0.013043	-3.75	0.001
ECT(-1)	-0.39174	0.123656	-3.17	0.0043

Source: Author's computation using stata

Table 13 shows that the error correction term is statistically significant and negative. The negative coefficient suggests that more than two years will pass before all 39.17% of the shocks that occurred in the prior year are adjusted towards long-run equilibrium in the current year. The rate, or 39.17%, further supports the existence of a steady, long-term correlation between real economic growth and the explanatory variables that is, capital creation, government spending, gross national saving, banking sector lending, and inflation.

The Short-run impact of role of Banking Sector on Economic Growth

Banking sector Deposit: Similar to its long-term impact, saving mobilization has a major and favorable influence on economic expansion. With a coefficient of 1.935 and a p-value of 0.010, the regression analysis's results show that deposits have a considerably beneficial impact on the country's economic growth. This suggests that a 1% increase in deposits will, under other conditions, result in a roughly 1.935% boost in economic growth in the near term. At the 5% level of significance, the investigation is able to reject the null hypothesis that there is no effect thanks to the p-value of 0.010.

Banking Sector Credit: In contrast to its long-term impact, credit expansion has little bearing on economic expansion. Regression study results show that credit has a positive, but not statistically significant, impact on the country's economic growth, with a coefficient of 0.231945 and a p-value of 0.595. The study is unable to reject the null hypothesis that there is no effect, even at the 1% or 10% significance level, due to the p-value of (0.595).

The Long-run impact of Capital Accumulation, National Saving Government Expenditure

and Inflation on Economic Growth

Capital Accumulation: Capital accumulation has a statistically significant and adverse impact on real economic growth, in contrast to its long-term influence. With a p-value of 0.030 and a coefficient of -1.63271, the research rejects the null hypothesis at the 1% level of significance according to the t-statistic. The real economic growth rate decreased by 1.632% with a negative coefficient.

National saving: similar to its long-term impact, gross national saving has a negligible but favorable impact on the expansion of the economy of the nation. Regression study results show that credit has a notably favorable impact on the nation's economic growth, with a coefficient of 0.66512 and a p-value of 0.343. This suggests that, with everything else being equal, a 1% increase in gross national saving will result in a about 0.66512% increase in economic growth in the near term. At the 1% level of significance, the investigation is able to reject the null hypothesis thanks to the p-value of (0.343).

Government Expenditure: The t-statistic demonstrates that government spending has a notable and detrimental impact on economic growth in the near term. A one percent increase in government spending results in a -1.554189 percent loss in real economic growth, according to its coefficient. This result is also in line with the findings of Teshome (2006) and Tofik (2012), who contend that the majority of government spending is attributable to wasteful and inefficient spending on things like rent, debt servicing, salaries and benefits, and transfer payments, which have less of an effect on short-term economic growth.

Inflation: In contrast to its long-term effects, inflation has a statistically significant adverse impact on economic expansion. With a coefficient of 0.48961, the results of the regression analysis show that inflation has a considerable and negative impact. This suggests that a 1% increase in inflation will, under all other circumstances, result in a short-term drop in economic growth of roughly 0.489%. At the 1% level of significance, the investigation is able to reject the null hypothesis thanks to the p-value of (0.001).

4.4.3. Diagnostic Test for Short-run Economic Growth Model

Table 14: Short-run diagnostic tests

Description	probability
Jarque-Bera Normally Test	0.4209
Breusch-Godfrey Correlation LM Test	0.3906
Breusch –pagan-Godfrey Heteroskedasticity Test:	0.6986

Source: Author's computation using stata

At the 5% level of significance, the research rejects the null hypothesis of the three diagnostic tests based on the probability value shown in Table 14 above. This suggests that there are no statistical issues with the research, that the error terms are normally distributed rather than serially correlated, and that Previous studies' findings refute the idea that deposits have little to no influence on economic growth (Muluneh, 2015 and Venkati, 2016).heteroskedasticity does not exist in the model.

To verify the model's long-term stability, tests are conducted in addition to the ones mentioned above. As advised by et al. (2001), this is accomplished using cumulative sum of recursive residuals (CUSUM). This test displays the time frame during which the instability occurred and gives a graphical picture of the model's stability.

4.5. Granger Causality

As stated in chapter three, equations (4) and (5) are used to carry out the causality analysis. Every variable is put to the test, including bank deposits, bank credit, economic expansion, capital accumulation, national savings, public spending, and inflation. Wald F-statistics for the joint hypothesis are then used to make decisions. The null hypothesis for each equation is that X does not Granger-cause Y in the first regression and that Y does not Granger-cause X in the second regression (see Tables 14 to 18).

Table 15: The role of Bank and real Gross Domestic Product

Null Hypothesis;	Observation	F-Statistic	Probability.
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Deposit does not Granger Cause Real Gross Domestic Product	43	7.8914	0.0214
Real Gross Domestic Product does not Granger Cause Deposit	43	13.2806	0.0007
Credit does not Granger Cause Real Gross Domestic product	43	2.6466	00.2017
Real Gross Domestic Product does not Granger Cause credit	43	15.0234	0.0015

Source: Author's computation stata

The null hypothesis, which states that deposits do not cause real GDP, is rejected, as shown in table 15 above. This demonstrates the presence of a bidirectional causal relationship between real GDP and bank deposits. Deposits therefore have an effect on economic growth in addition to being a cause of it. However, at the 1% level of significance, the research was unable to reject the null hypothesis that credit does not granger cause economic growth. Instead, it was able to reject the null hypothesis that there is no granger causation from credit to economic growth. Consequently, we can draw the conclusion that there is a unidirectional causal relationship between credit and economic growth, which is also in line with Obademi and Elumaro's (2014) findings.

Table 16: The role of Bank and Gross Capital Formation

Null Hypothesis:	Observation	F-Statistic	Prob.
Gross capital formation does not granger cause deposit	43	11.6754	0.0038
Deposit does not granger cause gross capital formation	43	0.05642	0.9854
Gross capital formation does not	43	4.67435	0.0034

granger cause credit			
Credit does not granger cause gross capital formation	43	1.62317	0.8217

Source: Author's computation using stata.

The research disproves the null hypothesis that bank credit and deposits are not caused by gross capital formation, as seen in table 16 above. This suggests that the banking sector did not play a major role in terms of deposits and credit; rather, the nation's capital accumulation supported the financial sector's role in encouraging the mobilization of deposits and the extension of credit.

Table 17: Real gross domestic product and gross capital formation

Null Hypothesis :	Observations	F-statistic	Probabilities.
Gross Capital Formation does not granger cause Real Gross Domestic Product	43	4.56328	0.0165
Real Gross Domestic product does not granger cause Gross Capital Formation	43	14.06599	0.0004

Source: Author's computation using stata.

Table 17 above shows that, at the 5% and 1% significance levels, respectively, the research rejects the null hypothesis that Capital Formation does not impact Real Gross Domestic Product and vice versa. Accordingly, Uneze (2013) found a bidirectional relationship in his study of the contribution of capital formation to economic growth in sub-Saharan African nations. Thus, the study comes to the conclusion that capital accumulation is both the cause and the result of economic expansion.

Table 18: Gross capital formation and control variables

Null Hypothesis	Obs.	F-statistic	Prob.
Gross national saving does not granger cause gross	43	3.54732	.03632

capital formation			
Gross capital formation does not granger cause gross national saving	43	5.32169	0.0743
Government expenditure does not granger cause gross capital formation	43	0.11657	0.6745
Gross capital formation does not granger cause government expenditure	43	7.44653	0.0202
Inflation does not granger cause gross capital formation	43	0.06754	0.65490
Gross Capital Formation does not Granger cause Inflation	43	0.87325	0.3761

Source: Author's computation using stata.

Table 18 shows that, at a 5% significance level, the research rejects the null hypothesis that gross national saving does not contribute to gross capital formation. However, as the converse is only significant at a 10% significance level, the null hypothesis is not supported. Regarding the second control variable, the study was unable to refute the null hypothesis that government spending had no causal relationship on gross capital formation. Nonetheless, there is statistically strong evidence for a unidirectional causal relationship between government spending and capital formation. With regard to the last control variable, the study was unable to disprove the null hypothesis, which holds that capital accumulation is not caused by inflation. This suggests that the variables' causal relationship is not supported by statistically significant evidence.

Table 19: Real Gross Capital Formation and Control Variables.

Null Hypothesis:	Obs.	F-statistic	Prob.
Gross national saving does not Granger Cause Real Gross Domestic Product	43	1.32451	0.2367

Real Gross Domestic Product does not Granger Cause Gross national saving	43	12.3209	0.0002
Government Expenditure does not Granger Cause Real Gross Domestic Product	43	6.74076	0.03482
Real Gross Domestic Product does not Granger Cause Government Expenditure	43	11.4356	0.0007
Inflation does not Granger Cause Real Gross Domestic Product	43	0.23865	0.75632
Real Gross Domestic Product does not Granger Cause Inflation	43	1.54367	0.10368

Table 19 above demonstrates that the research was unable to reject the null hypothesis, which states that there is only a unidirectional causal relationship between real gross domestic product and gross national savings. These results are also in line with those of Mohan (2006) and Abel (2016). Consequently, this goes against the widely held belief that more saving leads to economic growth and raises questions about whether national saving should be used as a target variable for growth. Therefore, as in the case of Nigeria, we can draw the conclusion that economic growth continued and contributed to national savings (Nurudeen, 2010).

The study disproves the null hypothesis, which holds that real GDP is not caused by government spending and vice versa. This demonstrates that government spending and economic growth have statistically significant bidirectional causal relationships. Conversely, the study is unable to refute the null hypothesis, which states that there is insufficient statistical support for a causal relationship between the two variables that is, that inflation does not drive economic growth and vice versa.

4.6. Summary of Findings

The study used 43 years of data, from 1980 to 2022, to analyze the contribution of the banking industry to capital accumulation and economic growth. It achieved this by co-integrating the ARDL approach and the Error Correction Model (ECM). Real GDP was used as a proxy for

economic growth, gross capital formation for capital accumulation, and banking sector deposit and credit for the banking sector's role in the study.

Strong statistical evidence is found to be in opposition to the null hypothesis that the variable has a unit root or is not stationary at the first difference, according to the unit root analysis. The outcome of the ARDL bound test suggests that there are long-term equilibrium linkages between the contribution of the banking industry and other variables that regulate gross capital formation and economic growth. Furthermore, the ECT_{t-1} coefficient value (-0.6061) for the first model has the expected sign and significance level. This suggests that there is a 60.61% correction rate between the short-run disequilibrium and the long-run equilibrium. The second model's ECT_{t-1} coefficient result (-0.3917) also has the predicted sign and significance level. This suggests that there is a 39.17% correction rate from short-run disequilibrium to long-run equilibrium. Using the CUSUM & CUSUMQ test, the error correction model's stability of result is validated.

The estimated coefficient's conclusion indicates that the banking sector's role in deposit mobilization contributes to capital accumulation and economic growth in the short term in a statistically meaningful and favorable way, but not in the long term. Long-term capital accumulation and economic growth are not significantly impacted by credit provided by the banking industry. Credit, however, has a very favorable short-term effect on capital accumulation but not on economic growth. Additionally, a statistically significant relationship between gross capital formation and long-term economic growth has been found by the research.

In the short run, gross national saving makes a substantial and positive contribution to capital accumulation and economic growth; however, over time, this contribution diminishes and becomes less significant. On the other hand, government expenditure has a significant long- and short-term influence on capital formation; nevertheless, it has a negligibly favorable long-term impact on economic growth and a substantially negative short-term impact. There's another interesting observation about inflation. Both short- and long-term capital accumulation and economic growth are adversely affected by inflation in a statistically meaningful way.

Based on the Granger-Causality analysis, the research also yields the following results. Government spending, banking sector deposits, and gross capital creation have a two-way causal link with economic growth, whereas credit and gross national saving have a one-way causal relationship that goes from economic growth to them. Additionally, there is a unidirectional

causal relationship between government spending, banking sector deposits, lending, and national saving and capital formation. Studies, however, do not provide strong evidence for a direct relationship between inflation and economic growth or capital accumulation.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Conclusion

The goal of this research is to determine how the banking industry has influenced Ethiopia's capital accumulation and economic growth during a 43-year period (i.e., from 1980 to 2022). Banking system in Ethiopia has short period of history as compared to developed world. In order to ascertain whether a long-term association existed, the study used the Error Correction Model in conjunction with the ARDL technique to co-integration. Gross capital formation served as a stand-in for capital accumulation, real GDP served as a stand in for economic growth, and the study's banking sector's contribution was represented by deposits and credits. Except for inflation, which is immobile at level and needs the use of the ARDL approach to co-integration, The unit root analysis demonstrates that the null hypothesis that variables have unit roots or are not stationary at their initial difference is not supported by statistically meaningful evidence. The results of the bound test show that there are long-term equilibrium linkages between capital accumulation, economic growth, and the function of the banking sector.

The banking sector deposited value indicate the relationship negatively, likewise has the expected sign and significance level. This indicates that 65.03 percent of the previous year's short-run disequilibrium happened in the current year after being restored to its long-run equilibrium. Furthermore, a greater coefficient of this kind provides additional evidence of a steady, long-term link between the variables. Likewise, the second model's banking sector deposit result (-0.851), which indicates that 85.10 percent of the short-run disequilibrium is corrected to its long-run equilibrium every period, has the expected sign and significance level. The conclusion of the estimated value shows that the banking sector's contribution to deposit mobilization has a significant positive short-term effect on capital accumulation and economic growth, but has no discernible long-term effect on growth. Similar to this, bank loan has a large and favorable impact on capital accumulation in the short term but has no discernible influence on capital accumulation or economic growth over the long term. In this sense, the Granger causality test confirms that the banking industry's role cannot sustain long-term growth; Credit and deposits are only responding to the increase in capital accumulation and economic growth. In general, capital accumulation is not how the banking industry contributes to economic growth.

The study discovered that capital accumulation has a positive and statistically significant impact on long-term economic growth, which is consistent with Abel's (2016) findings. In this sense, the causality test has revealed a two-way relationship between growth and capital accumulation. This suggests that capital accumulation is both a cause and an effect of economic expansion.

Concerning the control variables, national saving has a notably favorable short-term impact on capital accumulation and economic expansion. However, over time, it has less of an effect on economic growth and no discernible effect on capital formation. Abel's (2016) findings are consistent with the Granger non-causality test, which confirms the presence of a unidirectional causal relationship between growth and national saving in this instance.

The single factor that affects capital accumulation both short- and long-term is government spending. Government spending, however, has a negative short-term impact on long-term economic growth. In this way, a unidirectional causal relationship exists between capital accumulation and government spending, although a bidirectional relationship is confirmed by the pair-wise Granger non-causality test with economic growth. Regarding inflation, there's another captivating finding. Inflation has statistically significant influence on capital accumulation and economic growth. But the effect of inflation is minimal because of its little coefficient. The three variables inflation, capital accumulation, and economic growth do not exhibit statistically significant evidence of connection, according to the pair-wise Granger causality test. Thus, We can therefore conclude that, far from having a negative effect, inflation genuinely beneficial the country's economic growth and capital accumulation.

5.2. Recommendation

This study's conclusion has important policy implications. Given that the financial sector's contribution to capital accumulation and economic growth mostly has a short-term impact; policymakers are expected to exert significant effort to fortify this contribution over the long term. According to theories and empirical research findings, when the banking and financial industry is competitive and efficient, it can play a major role in long-term economic growth. However, as previous research has shown, the nation's banking industry is monopolistic (Alemnew, 2017) and inefficient (Tadesse, 2017). Therefore, decision makers should concentrate on establishing a conducive business environment to support the banking sector's role in expanding credit and mobilizing deposits, which is how long-term economic growth is attained.

Early economic growth is a critical time for capital accumulation because the nation is experiencing a capital shortage. Therefore, achieving a larger savings to national income ratio is advised. In this regard, a healthy banking system plays a major role in capital building by encouraging saving and directing funds towards the most advantageous uses. Therefore, policymakers must devise measures that allow the financial sector to generate greater levels of savings and effectively distribute them to the economic sectors that are most productive.

Another reason that may be influencing the absence of a significant long-term relationship between the function of the banking sector, capital accumulation, and economic growth is the fact that the financial industry is not growing as expected or in response to economic growth. It is therefore recommended that policymakers take into account the effects of institutional, political, and legal frameworks that have a significant influence on the development of the financial sector, as well as the effects of fiscal and monetary policies that impede the role of financial intermediaries, or banks, in the provision of financial services.

Developmental strategies should, in general, focus on establishing a contestable financial sector in order to bring about the financial sector. This can be completed in two ways: (1) by establishing a stock and bond market to boost competition in the financial sector; and (2) by reducing entrance barriers, loosening policies governing banking operations, and granting banks more freedom all of which are crucial for improving efficiency. This will increase the ability to mobilize savings and the effectiveness of financial resource allocation, both of which are necessary for quick capital accumulation and economic expansion. Theorists assert that in the absence of such progress, the banking industry will imperil the generally accepted projection of increasing economic growth.

5.3. Further Research

As stated in the issue description, the study attempted to close the gap in the body of existing literature. However, more research is needed to establish the true reason for the banking industry's lack of notable long-term capital accumulation and contributions to economic growth . Furthermore, the study suggests that comparable work be done with a different approach to long-run model estimate, which accounts for the legal, political economy, religious and cultural, and structural consequences.

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