PIOUS FORD WILLIAMS

THE EFFECT OF FINANCIAL SECTOR DEVELOPMENT AND ECONOMIC GROWTH IN GHANA: EMPIRICAL STUDY AND ANALYSIS (1990-2020)

MSc. THESIS

Nicosia

December, 2022

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Nicosia
December, 2022

Approval

We attest to having read the thesis that was handed in by **Pious Ford Williams** and that its title was "**The Effect of Financial Sector Development and Economic Growth in Ghana: Empirical Study and Analysis**" **(1990-2020)**. In addition, we are of the opinion that it satisfies all of the conditions, both in terms of its scope and the level of quality that it possesses to be a thesis for the Master of Science degree.

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Declaration

I, Pious Ford Williams, certify that all of the data, sources, and results contained in this thesis have been gathered, evaluated, and reported in accordance with the standards and guidelines set forth by the Graduate School and the Near East University Institute of Graduate Studies. In addition, I solemnly declare that I have appropriately credited and referenced anything that wasn't initially collected by me for this study, as it is necessary according to these norms of behavior. This statement needed to be made because it was the only way to guarantee that the standards and behaviors discussed previously would be adhered to.

PIOUS FORD WILLIAMS

……/……. /2022

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A special thank you to my housemates, Abraham Wallace Karsuah and Roosevelt M. Zulu, for the mutual respect they had shown me as well as the countless enjoyable times we had spent together while I was pursuing my academic goals. In particular, I would like to acknowledge the fact that Abraham Wallace Karsuah and Roosevelt M. Zulu had been very supportive of my efforts to improve my academic performance. I would like to tell them from the bottom of my heart how grateful I am for the mutual understanding that existed amongst us.

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It is of paramount importance that I dedicate this work to my lovely wife, Hawa M. Williams, as well as to my children and granddaughter, as well as to other family members, friends, and well-wishers, for all the help and prayers they had offered on behalf of me. May God copiously bless you my lovely wife, children and granddaughter for your patience!

Our department has had a lot of success recently, and now is a very productive time for it. **PIOUS FORD WILLIAMS** is one amongst many the department can count on without any reservations.

Abstract

The Effect of Financial Sector Development and Economic Growth in Ghana: Empirical Study and Analysis (1990-2020)

PIOUS FORD WILLIAMS

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December, 2022 Page, 114

My study looks at the relationship between the growth of the financial sector and the expansion of the economy in Ghana over a period of 31 years, specifically from 1990 to 2020. In relation to the subject matter of my paper, the ARDL model was applied in order to determine the relationship between the dependent variable and the independent variables. Alternatively, in order to investigate the effect of financial sector development and economic growth in Ghana, this research necessitates the application of ARDL model analysis or regression in order to determine the relationship between the dependent variable and the independent variables. Following the application of the ARDL model, the findings of this investigation indicate that the independent variables (credit to the private sector, capital stock, labor, and export) have short-run as well as long-run relationships with the dependent variable, which was the focus of this investigation (GDP per capita). The findings show that credit to private sector, export and labor have a positive impact on Ghana's economic growth; while capital stock has a negative impact on GDP per capita both in the long and short-runs. In conclusion, we suggest that, in light of our findings, strict laws should be put into place to control and monitor financial institutions so as to reduce the level of microeconomic uncertainty and move in the direction of investment, productivity, and economic growth.

Keywords: Financial sector development, Economic growth, Garnered, Financial intermediary, Amelioration.

Özet

Finans Sektörü Gelişiminin ve Ekonomik Etkisi

Gana'da Büyüme: Ampirik Çalışma Ve Analiz (1990-2020)

PIOUS FORD WİLLİAMS

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Çalışmam, özellikle 1990'dan 2020'ye kadar olmak üzere 31 yıllık bir dönemde Gana'da finans sektörünün büyümesi ile ekonominin genişlemesi arasındaki ilişkiyi ele alıyor. Bağımlı değişken ile bağımsız değişkenler arasındaki ilişkiyi belirlemek için Alternatif olarak, Gana'da finansal sektör gelişimi ve ekonomik büyümenin etkisini araştırmak için bu araştırma, bağımlı değişken ile bağımsız değişkenler arasındaki ilişkiyi belirlemek için ARDL model analizi veya regresyon uygulamasını gerektirmektedir. ARDL modelinin uygulanmasının ardından, bu araştırmanın bulguları, bağımsız değişkenlerin (özel sektöre verilen krediler, sermaye stoku, işgücü ve ihracat) bağımlı değişkenle (ki bubu araştırmanın odak noktasıydı) (kişi başına düşen GSYİH). Bulgular, özel sektöre, ihracata ve işgücüne verilen kredilerin Gana ekonomik büyümesi üzerinde olumlu bir etkiye sahip olduğunu, sermaye stokunun ise hem uzun hem de kısa vadede kişi başına düşen GSYİH üzerinde olumsuz bir etkiye sahip olduğunu göstermektedir. Sonuç olarak, bulgularımız ışığında, mikroekonomik belirsizlik düzeyini azaltmak ve yatırım, üretkenlik ve ekonomik büyüme yönünde hareket etmek için finansal kurumları kontrol etmek ve izlemek için katı yasalar getirilmesini öneriyoruz.

Anahtar Sözcükler: Finansal sektör gelişimi, Ekonomik büyüme, Elde edilen, Finansal aracı, İyileştirme.

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Abbreviation

LAUS: Local Area Unemployment Statistics

ARDL: Autoregressive Distributed Lag

ADF : Augmented Dickey-Fuller

GDP : Gross Domestic Product

CPS : Credit to Private Sector

CS (K) : Capitol Stock

X : Export

L: Labor

HIPC : Heavily Indebted Poor Countries

EG : Economic Growth

RDT : Residual Diagnostic Test

URT : Unit Root Test

ADB : African Development Bank

RCBs : Rural and Community Banks

SLOs : Savings and Loan Organizations

FINSSP: Financial Sector Strategic Plan

ERP: Economic Recovery Program

WACB: West African Currency Board

IMF: International Monetary Fund

BoP: Balance of Payments

ED: Economic Development

ECM: Error Correction Model

FDI: Foreign Direct Investment

FI: Financial Institutions

FMF: Financial Market Frictions

GNP: Gross National Product

VAR : Vector Autoregressive

PNDC: Provisional National Defence Council

GCT: Granger Causality Test

OECD: Organization for Economic Co-operation and Development

CHAPTER I

1.1 Introduction

Ghana has garnered a reputation as a country that makes it easy and uncomplicated to start a business and maintain it there as a result of its varied economy, settled political climate, uninterrupted economic development, and highly developed systems of finance. This reputation comes as a direct result of the fact that Ghana possesses all of these characteristics. As a result of this, Ghana has been successful in luring significant sums of foreign direct investment, and as a direct consequence of this success, Ghana is currently among the leading nations in Sub-Saharan Africa to receive this kind of investment (Report collected and released in 2009 by the African Development Bank). The financial sector can be developed in one of the following four distinct approaches: by increasing the efficacy of the existing financial industry; by broadening the scope of the existing financial sector; by ameliorating the management the existing financial industry or by increasing the number of people who have access to monetary services (Mohan, 2006).

Considering the case with the vast majority of developing nations that have embarked on the process of structural and economic reforms, Ghana has gone through a restructuring and reformation process in the financial industry as an important component of a comprehensive program to liberalize the financial sector. This is in accordance with what is seen in other developing nations that have engaged in the process. As a direct result of the execution of the reforms, the newly fashioned financial system now provides access to a more diverse selection of services, in addition to innovative new products that are more focused on the future. Even though a lot of medium-sized and small private businesses rely on capital investments that they pay for themselves, the economy is mostly driven by debt financing, which banks make possible.

So, the next step and main goal of the policy that guides the financial system was to build a strong capital market that could be used to raise money for large amounts of equity financing and investment. This was accomplished as a means for generating money to support significant quantities of equity financing and investments. This was the most important goal that the financial market policy wanted to accomplish.

As a result of the reforms, which liberalized interest rates and bank credit, the system in the financial sector, which had previously been defined by rules, was altered to one that is based on the market. This was a significant transition from the previous regulatory-based system. In addition, the central bank began a gradual move away from a direct monetary system limitation and toward a method that is not direct that made use of the instruments of market-based policy. This change took place gradually over the course of many years. As a component of the process, the Bank of Ghana developed new financial instruments, lowered the minimum reserve needs for banks, and expanded market operations with the aim of managing liquidity. Additionally, these policies, the soundness of the banking system was improved by setting up an appropriate operational architecture, enhancing bank supervision, and upgrading the effectiveness as well as the profit margins of banks, such as by substituting Their non-performing assets and so on (Quartey, 1997).

Because of the significant long-term structural shifts that have taken place in the macroeconomic environment, there has been a noticeable rise in the quantity of bank credit that has been granted to the private sector. In addition, the year 2004 saw the introduction of new banking regulations, which resulted in a significantly increased degree of competition among the many different financial institutions. All of these things took place in 2004. But the Bank of Ghana has strong regulatory powers that allow it to keep an eye on the country and find any weaknesses in the system.

The management of monetary resources is the primary focus of the industry for financial services, which includes a diverse scope of companies. This sector is referred to as the "financial services" industry. In Ghana, the part of the economy known as "financial services" can be broken down into three key subsectors:

- Banking and financial institutions (including those offered by financial institutions that are not banks and currency exchange)

- Health and Car Insurance
- Capital/financial market

Savings and loan organizations rural and community banks and a plethora of other financing and leasing firms are just some of the several types of financial institutions that

are now in existence. The implementation of the Financial Sector Strategic Plan by the government of Ghana has the overarching objective of fostering the expansion of a financial sector that is fit for the needs of a country that is working toward transitioning into the middle-income bracket.

The goal is to have a financial sector that is adaptable to the requirements of the 21st century, in particular in light of the possibility of increased international and regional rivalry as well as opportunities for Ghanaian players in the financial market. The idea behind the concept is to create a financial system that is capable of adapting to the needs of the 21st century.

1.2 Financial Outgrowth

The fees associated with obtaining information and carrying out contractual obligations, and executing transactions, give an incentive for particular types of contracts pertaining to finances, markets, and mediators to come into existence. There is a wide range of information, enforcement, and transaction types, in addition to various combinations of these elements. Different costs and different legal, regulatory, and tax systems in different countries and at different times drove the creation of different financial contracts, markets, and middlemen.

Financial systems, which were initially created to decrease the negative consequences of market frictions, now intrinsically alter the allocation of resources across both place and time. This can be seen in both the global economy and the United States (Merton and Bodie, 1995, p. 12). In order to establish a conversation on how the financial system influences decisions about savings and investments, and therefore how these choices affect economic growth, Ross Levine centered his attention on the five services that are furnished by the financial system.

In other words, the costs of information, enforcement, and transactions are decreased, which is one of the five basic kinds of services that financial institutions deliver to the economy. Another sort of service that financial institutions contribute to the economy is capital creation. There are many methods to categorize what the real job relating to the financial system is, but I have listed the most common ones below (Merton, 1992; Merton and Bodie, 1995).

When there is a reduction in the negative effects of knowledge, enforcement, and transaction costs, it is feasible to have financial development. This can happen when financial implements, markets, and mediators do this. On the other hand, this does not necessarily imply that these expenses are completely eradicated. As a consequence of this, the phrase "financial development" is used to refer to **(1)** increases in the output of information that is given ahead of time about investments that could be made; (ii) keeping an eye on investments that have already been made; and application of corporate administration or governance; (iii) trading, diversity, as well as methods for managing risk; (iv) group savings accumulation; and (v) commodity and service trading, one of which consists of the choices that people make about their savings and investments.

Because there are a great number of frictions in the market and because the rules, regulations, and policies of the many countries and regions vary greatly from one another, economies and improvements in each dimension may have varying effects on the distribution of resources. This is contingent on the presence of many additional frictions. There are two primary considerations to take into account when discussing the ways in which economics and expansion theory might be connected to one another. You are creating more work for yourself from the very beginning of the process. To begin, a substantial amount of research that has been conducted on the subject of accounting for large-scale development hints that the single most essential contributor to economic expansion is physical capital. It is impossible to credit all economic growth to accumulation on its own. So, if we want to explain money, we need theories that show how changes in economic developments affect the choices we have for allocating resources in a way that makes us more productive.

Second, there are two important things that we do not know about how economic expansion influences the construction of financial institutions that are able to improve the distribution of resources and reduce risk. Those two things are as follows: In particular, levels that are greater due to the well-known income and substitution effects, the impacts of investment returns on savings rates are difficult to anticipate. This is especially true for levels that are higher because of the well-known income effects.

In a similar manner, Levhari and Srinivasan (1969) discovered that a reduced degree of risk had an ambiguous influence on savings rates. Therefore, financial

arrangements that result in a better utilization of resources and a lower risk may cause less money to be saved than would otherwise be the case. The accumulation of financial resources is thus the primary emphasis of an economic development model that takes into consideration the effect that physical capital has on the wider environment. If both of these things happen at the same time, it might possibly slow down economic progress and lead to a drop in welfare. This would be the case if the fall in savings and the externality both took place. When used together, they provide an effect that is big and weighty enough to be regarded as important.

There will be a discussion on the processes through which market frictions lead to the establishment of financial systems that supply these five financial services, and there will be an explanation of how each one ought to be carried out. It has an effect on the pace of the expansion of the economy as well as the allocation of available resources. It is reasonable to anticipate that an industry that is financially secure, in addition to being productive, efficient, and doing a good job, will attract more individuals to work in it. For the economy to grow, the rate of capital accumulation as well as the manner in which capital is utilized must be made more efficient.

The work done by financial intermediaries, who play an extremely significant role in this process, allows for significant reductions in the cost of potential investments to be made. There are a variety of factors that have the ability to impact the patterns of long-term growth. Some of these factors include the exercise of corporate control; the management of risk; the gathering of savings, and the distribution of investment in diverse ways. The theory of economics did not give nearly as much attention as it does today to the function that the financial markets serve within the economy until very recently. Development was directly crucial to its success, but contrary to popular belief, technological advancement and population increase were not seen to be the fundamental driving forces behind expansion. The growth of modern ideas led people to stop thinking in the same way they always had.

Both the amount of physical capital and the amount of human capital are essential elements in determining the pace of economic expansion. Models that anticipate future economic growth and indicate that expenditures on research and development will lead to future economic growth are important considerations. In light of what has been said

above, there is a rising concern over the potential methods by which these investments may be funded as well as the part that financial middlemen will have in the process.

Not only is the topic of how to divide money is one of the most essential concerns for development, but it is also one of the most crucial questions when considering the distributional effects of growth at the macroeconomic level (Gross, 2001). People who are interested in growth theory discuss a number of topics, one of which is the correlation between significantly greater levels of GDP and increased financial development. There is a chance, although a small one, that the expansion of the real and financial sectors of the economy is connected favorably in some manner. This is not an entirely improbable hypothesis. Despite this, it does not seem that there is a direct link in the chain of causality between the two. Which of the two possible explanations is correct, and what are they? In what ways do you anticipate it playing a role? Is it accurate to say that finance is the driving force behind economic growth, or does it only play a supporting role in this process? Can we replicate the success that has been experienced elsewhere?

Research based on empirical evidence has been executed with the purpose of providing supporting evidence for the presence of this causal connection. The concept of "supply-leading finance," which states that financial intervention helps and keeps the expansion of the economy- continuing in the process of enhancement and maturity, is supported by comparisons between the degrees of repressiveness that are found in different nations. In 1969, Goldsmith conducted his ground-breaking research on finance and growth because of the following: one of the most pressing challenges in the area of finance, if not the only most significant problem in the field as a whole, is as follows: Existing financial structures and new developments have a big effect on the expansion of the economy, which are very important factors. Goldsmith's research was a pioneering effort because of the following: (p. 390) "Therefore, he set out to determine whether or not the financial sector had an important role in the expansion of the economy."

Goldsmith (1969) spent the 1960s methodically collecting data on 35 different nations in order to determine whether or not the many different types of marketplaces and intermediaries that are engaged in an economy had an influence on the economy as a whole. Between the years 1860 and 1963, the value of financial growth assets that were

owned by intermediaries was expressed as a proportion of GDP. A number of researches, which will be carried out throughout the course of time, will concentrate on Ghana.

It was conceivable to conceive of a rationale for conducting this inquiry given the information that was offered earlier in this paragraph. As a consequence of this, the topic "The Effect of Financial Sector Development and Economic Growth: Empirical and Analytical Studies on Ghana" was selected. This is a piece of research that models the connection between the expansion of the economy and the financial sector development of Ghana from 1990 to 2020 with the intention of studying how the two factors are related to one another the connections that exist between these two different areas of concentration.

1.3 Ghana's Historical Context and Economic Snapshot

In times gone by, the country of Ghana was referred to as the Gold Coast due to its location on the Western Coast of Africa. It was the first country to attain independence south of the Sahara and is without a doubt one of the countries in Africa with unique characteristics in regard to its strategic geographic position, rich political history, and immense natural resources. It is situated between latitudes 4 and 11.5 degrees north of the Equator, as well as longitudes 3.11 degrees west and 1.11 degrees east of the Equator, and it has a total land area of 238,539 square kilometers, which is comparable to 92,100 square miles. Burkina Faso can be found to the north of Ghana, while the Ivory Coast can be found to the west, Togo can be found to the east, and the Atlantic Ocean can be found to the south of Ghana. Ghana is unique in that it is situated in close proximity to the geographic center of the world. This proximity is a result of the fact that the Greenwich Meridian passes through Tema, the most industrialized city in the nation. This is undoubtedly one of the most distinguishing features of the nation. Ghana has an estimated population of 31.07 million people, and English is the country's official language. The population estimate was provided by the United Nations. Ghana is widely regarded as having one of the best natural endowments in Africa due to the abundance of its agricultural, mineral, and water resources. In Ghana, just 39% of the land that is suitable for agriculture is being cultivated, despite the fact that 60% of the country's population is

used in agricultural activities. The majority of Ghana's land area, or 57%, is used for agricultural purposes.

Ghana is now Africa's second-biggest exporter of wood and wood products and the continent's third-biggest producer of wood. In addition to being the second-greatest producer of cocoa in the world, Ghana is also the second-greatest exporter of wood as well as wood products on the African continent. The total quantity of cocoa that was produced saw significant growth, climbing from 437 thousand metric tons in the year 2000 to 740 thousand metric tons at the end of the year 2006. The pace of monetary expansion was directly linked to the performance of the nation's export sector while the country was under colonial authority, and the colonial government made the maintenance of monetary stability a top priority during that period. When the financial sector was established, one of its primary goals was to become a provider of banking services to the British Colonial Administration and to a variety of British commercial companies. The West African Currency Board operated as the country's central bank from the years 1912 through 1957. During that period, it was responsible for maintaining the Sterling Exchange Standard by guaranteeing that the West African pound could always be convertible into sterling at any given moment. There were no restrictions on the rate at which money could be exchanged. The West African Currency Board was not accountable for any of the responsibilities that are often associated with central banks. It did not have any control over the amount of money that was produced, nor did the administration of the colony have any control over the amount of money that was in circulation.

In the years that followed Ghana's independence, the government that was in power at the time, headed by Kwame Nkrumah, formulated a socialist development plan. In accordance with this strategy, the role of the state was to be preeminent in the formulation and carrying out of all aspects of economic policy. The following characteristics helped to define this time period:

1. The Process of Issuing Import Permits in November of 1961, a comprehensive system was put into place in order to handle the process of issuing import licenses.

2. Currency Restrictions: The Exchange Control Act of 1961 introduced exchange regulations that covered a broad number of different international transactions and were intended to be all-encompassing. These regulations remained in effect up to 1973.

3. There is a cap on the total amount of money that may be borrowed at a certain rate of interest.

4. Programs of forced lending, which mandated banks to offer loans to sections of the economy that the government considered the most vital at the moment. These programs were implemented by the government.

The Ghanaian economy came considerably closer to being shut down as a result of the Exchange Control Act and the import licensing system. The industry of financial services is now undergoing the following shifts and transformations:

1. The Bank of Ghana has become the main place for all kinds of international financial activities, such as money transfers, letters of credit, collections, and the distribution of foreign currency, tourism, and travel.

2. In 1963, the Bank of Ghana Act was passed into law as a legislative response to the evolving macroeconomic conditions of the period. When the growth of the money supply for any given year exceeded 15%, the bank was obligated to provide the government with a report explaining the reasons for such an increase and make suggestions for what needs to be done to keep inflation pressures from getting too high. This report had to be submitted whenever the growth of the money supply for any given year exceeded 15%. This report had to be turned in by the due date.

3. The Bank of Ghana was given the power to run the country's banking industry and the right to set limits on how much money commercial banks can lend out or invest.

4. In 1964, new credit control systems were put in place to monitor and control how credit was given so that it fit with the government's economic plans.

In Ghana, poor economic performance has persisted for many decades as a result of domestic policy-induced distortions, shocks in global trade, and other external factors. This is because of the fact that the economy of Ghana is highly relying on international commerce. The abysmal performance of the economy led to standards that continued to deteriorate as well as substantial obligations on the socioeconomic front. An Economic Recovery Program was begun in 1983 by the government of the Provisional National Defence Council in partnership with International Monetary Fund and the World Bank with the intention of putting an end to the depressing state of affairs and launching a period of true economic development. The ERP prioritized minimal state involvement in

economic activity through policies of structural adjustment and stabilization, allocative efficiency as well as cost-effectiveness in the output and delivery of goods and services, particularly those that were produced by the public sector. This was the primary focus of the ERP. At this point, it would appear as though the economic reforms have been successful in producing results because the downward trends that were detected in key macroeconomic variables prior to the commencement of the reforms have been halted. This would indicate that the reforms have been successful in producing results. Between 1984 and 2002, for example, the yearly rate of expansion of the country's GDP exceeded 8% and averaged close to 4.7 percent.

Similarly, from 1983 to 1991, the annual rate of inflation fell from 122.8 percent to 10.4 percent, with an average rate of 27.6 percent from 1984 to 2002. The rate of economic growth has been largely consistent since the 1990s. The trends shown in the rise of GDP, inflation, and the exchange rate between the periods under consideration serve as illustrative evidence. Even though the economic policies that were implemented by the ERP have, for the most part, been successful in turning the economy around, it is extremely unlikely that this could have been accomplished without the massive inflows of financial resources from the World Bank and the IMF, not to mention other forms of bilateral financial assistance that were made possible by the ERP. Even though the economic policies that were implemented by the ERP have been successful in turning the economy around, it is highly unlikely that this could have been accomplished without the massive inflows of financial resources from the world. For example, the IMF provided $ 1,208 million financial resource inflows to support the ERP throughout the course of the period 1983–1991. In fact, the majority of countries' budgets are heavily reliant on contributions, with more than 40% of total government revenue coming from sources outside the country. Most of the money for capital spending in the development budget comes from donations from other people.

Nevertheless, there is an issue that has to be answered, and that is how long such surges of foreign investment can be depended on to maintain development? If Ghana does not improve its domestic financial resources, it will be unable to meet its goal of increasing its per capita income to $1,000 by the year 2012, since it is apparent that the flood of foreign resources cannot be projected to continue continually. Even if financing

from external sources were to be maintained indefinitely, the high degree of dependence of the national budget on such sources would have substantial ramifications for the economic process's capacity to continue functioning normally. Because a larger percentage of the country's income from exports is going toward the repayment of debt rather than being invested in the development of the productive capacity of the economy, the future expansion potential of the economy is placed in peril as a result of this trend. Ghana has made the decision to engage in a Heavily Indebted Poor Countries Initiative as a consequence of the unsustainable nature of its commitment to the repayment of its foreign debt. As a consequence of this, domestic financial resources need to be increased so as to foster the required expansion rate of 13 to 17 percent with the aim to achieve a per capita income of $1,000. This is the case unless foreign aid becomes structurally ingrained as a replacement for domestic resources rather than a supplement to such domestic resources. If this does not occur, then domestic financial resources need to be increased. This is true no matter if the country builds its infrastructure so that local resources are replaced by foreign help instead of the other way around.

When evaluating the state of any nation's economy, one of the most significant metrics that must be taken into consideration is the yearly rate of real gross domestic product expansion. As a consequence of this, there has been a noteworthy rise in the total number of studies that attempt, form both a theoretical and an empirical perspective, to determine the primary factors that contribute to the expansion of the economy and the possible origins of growth disparities across different locations and periods of time. These studies can be broken down into two categories: theoretical studies and empirical analysis. It has been shown that the degree of financial progress is one of the elements that play a role in the process of growth. In spite of this, the facts are not clear, and it is still being discussed whether financial development is a cause of growth at this point. Within this subfield of the growth literature, another problem that has been the subject of controversy is the question of what the acceptable or correct measurements of financial progress are. The aim of this study is to solve the issues that have been raised in previous research by making use of time-series econometric techniques. The first debate was settled by earlier academics that used a wide variety of Granger causality tests, the results of which, in the vast majority of instances, supported the finance-led expansion argument. Because of this,

the fundamental reason for doing this investigation is to find out what the proportionate contributions to economic expansion that are produced by a wide variety of financial development indicators. We have great expectations that this would put an end to the second point of controversy between specialists who are researching the connection between economic expansion and financial resources. The current corpus of research has identified a multiplicity of transmission channels by which the expansion of the economy may be stimulated by financial development. These channels may be found both in developed and underdeveloped nations. The impacts of these transmission channels can be seen in how people save and invest their money.

Levine (2004) says that for financial development to advance there needs to be progress in the following areas: the production of information about possible investments before they are made; the monitoring of investments and the implementation of corporate governance; trading, diversification, and risk management; the mobilization and pooling of savings; and the exchange of goods and services. Each of these monetary activities has the prospect of having an influence on the choices that an individual makes about their savings and investments, and therefore on the expansion of the economy. Any improvements might have a variety of effects on resource distribution that can be influenced by various disagreements operating in the economy at the same time. This is due to the fact that there is a large range of market frictions, and the laws, regulations, and policies that regulate those market frictions are subject to significant shifts not just from one economy to another but also over the course of time.

The field of empirical growth research has come to realize that myth-resistant financial enhancement is a key growth driver. This is the case despite the fact that some empirical researchers disagreed with the results reached from their investigations. The amount of political freedom, the authority of the rule of law as well as the protection of property rights are all key factors that contribute to the overall determination of the part that the financial markets and financial mediators play in the process of expanding businesses. This function looks quite different depending on what nation you're in. People are more likely to be willing to save money, and, as a result, free up resources that can be used by investors, in a country that has banks that are more efficient and reliable than in a nation where financial institutions are more likely to squander the wealth of depositors

by means of poor loans or even by defrauding them, as the opinion of Aghion and Howitt (2009) suggests. This is because people in the first country are more likely to believe that the banks in the second country are trustworthy.

The fact that financial institutions and markets serve to pool risks and promote the most effective allocation of risk to profits is another beneficial aspect of these two types of organizations. For instance, a depository institution is able to pool the savings of a large number of individuals and invest those savings in a vastly diverse range of projects, which enables the institution to provide small savers with the opportunity to benefit from the principle of proportionality and obtain a rate of return that is reasonably safe. This is made possible because the institution pools the savings of a large number of individuals. An efficient and effective financial institution can also assist to ease the agency issues via observing investors and ensuring that they are investing their money wisely rather than frivolously using the money that they borrowed on private consumption or committing fraud on the principal creditors in some other way. This is one way in which properly operating financial institutions may assist in the reduction of agency problems (Aghion and Howitt, 2009).

The majority of developing countries, including Ghana, are of the belief that development in the financial sector may be accomplished by building financial institutions in advance of the demand for the services that such organizations offer. As a direct result of this, the governments of these countries have enacted policies with the objective of augmenting the number as well as enhancing the quality of financial institutions in order to be ahead of the demand for them. This is part of their attempts to develop their financial sectors. As a direct consequence of this decision made by the Ghanaian government in 1953, the Ghana Commercial Bank, sometimes known as the GCB, was established (GoG).

In addition to continuing to carry out the functions that it was originally tasked with, the Bank of Ghana transitioned into a commercial bank when the nation attained its independence. Following that, further banks were established in order to perform a variety of functions for the economy. Unfortunately, the financial industry has been unable to appropriately route money to the important areas of the economy, despite its best efforts.

Instead, by the year 1983, the financial sector had been described by “financial shredding" (Shaw, 1973) or "financial discipline or repression" (McKinnon, 1973).

As a direct result of this, the Fiscal Sector Adjustment Program, which was a part of the Economic Recovery Program and started in the late 1980s, was required to be carried out. The McKinnon–Shaw hypothesis served as the conceptual underpinning for the development of FINSAP (Gockel, 1995, page 45). According to this idea, a financially troubled country might see an uptick in economic activity as an immediate result of the liberalization of its financial industry. As a direct result of these occurrences, the Ghanaian financial sector has been exposed to a significant level of alteration in terms of the variety of institutions that are now present as well as the range of services that are currently being provided. Both the atmosphere around interest rates in the financial business and the number of competitors operating the market have gotten more flexible. Since the early 1990s, the number of financial institutions has greatly increased, yet the degree to which financial deepening has increased has stayed essentially constant. This is despite the fact that the number of financial institutions has expanded significantly. These advancements in the financial industry are often mirroring itself in the growth rates of the M2/GDP ratio, especially with the implementation of FINSAP. This has been the situation during the course of the most recent years. Following a drop from 19.1% in 1980 to 13.4% in 1990, the financial sector development indicator known as the M2/GDP ratio augmented steadily from 14.2% in 1991 to 26.7% in 2004. Despite that, this number was much lower than the average value of 27% for Sub-Saharan Africa (Hofmeister, 1999, p.3). GDP growth had been volatile in the years preceding the implementation of the reforms in 1983; however, once the adjustments were made, GDP growth became stable and hovered around 4.5% on average.

Authors who adhere to the Schumpeterian school of thought and some neo-Keynesian authors have, without a shadow of a doubt, extolled the ability of the banking system to generate money and direct that money toward activities that are creative and productive. This assertion has also been made by a number of neo-Keynesian writers (Graff, 2003). Schumpeter (1911) said that a well-developed financial system could spur technological innovation and economic expansion by giving financial services and resources to entrepreneurs who are most likely to be successful in making new products

and processes. A better ameliorated financial sector offers a fertile environment for the distribution of available resources, enhanced supervision, and smaller pieces of information asymmetries, all of which are necessary for economic success. This is the dominating chant that is resonating in the domain of finance-growth connection, and it is a mantra that has been resounding or reverberating for quite some time (Shen and Lee, 2006).

A review of the relevant research that has been published in scholarly publications demonstrates that, in relation to the link between financial growth and economic expansion, there are four fundamental ideas that can be given (Apergis et al., 2007). The first theory that states that financial development is the major engine of economic expansion is referred to as the "supply-leading response hypothesis." The supply-leading response hypothesis is the name given to this particular line of thought (Schumpeter, 1911; McKinnon, 1973; Shaw, 1973). The term "demand-following response hypothesis" describes the second theory that has been proposed. It seems to imply that the expansion of the economy is the primary factor driving the development of the financial sector. It states that the growth of the real sector produces a larger demand for financial services, which is then yieldingly provided by the formation of new financial institutions. This cycle continues until the need for financial services is no longer met.

This viewpoint is predicated on the assumption that the real sector will maintain its rate of expansion (Odhiambo, 2010). The mutual effect hypothesis is the third one, and it states that there is a causal link that goes both ways between growth and financial stability. This hypothesis is based on the idea that there is a correlation between the two variables. This relationship can be attributed to both economic expansion and economic soundness (Demetriades and Hussein, 1999; Greenwood and Smith, 1997). The non-causal connection hypothesis is the fourth one, and it contends that there is no nexus between the development of the financial sector and the expansion of the economy that can be established as a cause-and-effect relationship. This theory is predicated on the notion that there is no association between advancements in financial markets and increases in overall economic activity (Graff, 1999; Lucas, 1988). In particular, Lucas (1988) takes issue with the notion that there is a connection between finance and economic

development, arguing that "economists greatly exaggerate the significance of finance in economic growth."

At the beginning of the 1960s, the Bank of Ghana provided the first funding that was essential for the establishment of development banks. These new financial entities were established with their specific duties from the beginning, and they were known as development banks. This was a reaction to the view that commercial banks – with their strategies of "borrowing short and lending short" – were not equipped for the job of mobilizing capital to finance medium-term and long-term initiatives. This view held that commercial banks were not equipped for the job because their strategies involved borrowing short-term and lending short-term. The following banks were set up to make it easier to get money for specialized projects in industry, agriculture, housing, and commercial banking, in that order:

1. The National Investment Bank was established the same year, in 1963 (industry).

2. The Agricultural Credit and Cooperative Bank was established in the year 1965 (agriculture).

3. The Bank for Housing and Construction was created the next year, in 1972 (Housing).

4. In 1972, the Merchant Bank was founded with the purpose of delivering all-encompassing banking services to commercial clients. Its main jobs were to be at a place where businesses could put large amounts of cash, to give those businesses start-up money and short-term and long-term loans, to buy and sell stocks and bonds, to finance imports and exports, and to give financial advice and consultation.

Long-term loans were obtained from the Bank of Ghana by the development banks so that they could use those funds as a source of financial underpinning for their lending operations. Additionally, the Bank of Ghana provided credit guarantees to the commercial banks of the nation in order to cover loans and advances that were made to commercial firms in the agricultural and industrial sectors of the economy. The banking business in Ghana has recently become much more active and cutting-edge. The vast majority of Ghana's financial institutions are now making use of cutting-edge technology in order to

expand their product and service offerings to Ghanaian customers. Banking halls are always housed in buildings that are regarded as being of the most recent technological advancements, and the employees working there are always both well-trained and beautiful. Now, residents of Ghana who live in the country's main commercial hubs have access to an astounding variety of possibilities. There are 23 different financial institutions that compete with one another for the business of the bankable population, which makes up around 10% of the entire population. There are now a lot of financial institutions in Nigeria that are involved in Ghana's growing banking sector.

As it can be seen, the contribution of private credit as a percentage of total gross domestic products rose step-by-step from 2003 to 2006, while the capitalization of the stock market as a percentage of total GDP also increased from 2003 to 2004 by 5.2%, but then continued to fall from 2005 until 2007 by 4.5%. This trend can be seen to be clearly demonstrated. Nevertheless, during the years of 2003 and 2007, the contribution to GDP produced by the financial sector had an overall positive impact on the economy as a whole. This was due to the fact that it increased consumer spending. When looking at these specific years, it is evident that the growth of the financial sector is positively associated with the expansion of the economy. This correlation is visible when looking at these particular years.

1.4 Statement of the Problem

There has not been a significant quantity of empirical research carried out in Ghana in the areas of the performance of the economy and the enhancement of the financial sector. This inquest was conducted with the intention of either determining the direction of cause and effect or determining whether or not there is a relationship between economic expansion and the challenges that have taken place in the financial industry. The intent of this body of work is to determine whether or not the expansion of financial markets in Ghana during the time period (1990 – 2020) that was analyzed had a beneficial impact on economic expansion and whether or there is a link between the expansion of financial markets and the expansion of economic activity over the course of time.

1.5 Purpose of the Study

In the modern, globalized world, it is just as common, if not more so, to be aware of the nexus between the financial industry and the expansion of Ghana's economy as it to be aware of the connection between the financial sector and economic expansion in a nation that is regarded as being economically underdeveloped. The amount of money that is in circulation in an economy when taking into account its domestic credit, capital stock, labor force, and the yearly income generation that is associated with its foreign commerce (BoP).

In conformity with the results of this investigation, a financial system may be defined as a network of interrelated economic systems that serve to promote the orderly flow of cash between investors, borrowers, and creditors. The objective is to make sure that economic resources are dispersed in the most effective way possible, with the end result being an increase in the return on investment for market players (ROI). This contributes to the growth of the economy.

1.6 Research Questions

There will be an attempt made to provide answers to the following broad questions:

1. What is the relationship between Ghana's financial sector development and the country's overall economic growth?

2. How much does the growth of Ghana's financial sector help the economy of the country grow and develop as a whole?

3. What influence, if any, does the expansion of Ghana's financial sector have on the expansion of the country's overall economy?

4. What plans does Ghana have in place to make sure that a safe financial sector keeps growing?

5. What factors are responsible for Ghana's rapidly expanding economy?

1.7 Research Hypothesis

The development of the research topic that will be explored might begin with the hypothesis, which acts as a jumping off point. The study's goals lead to the creation of hypotheses, which will then be tested with more advanced econometric tests.

1.8 The following are the Null Hypotheses

H0. The growth of Ghana's financial industry does not, in the long term, affect the nation's overall economic development.

H1. In Ghana, giving credit to the private sector doesn't have an immediate or long-term effect on the growth of the economy.

H2. Capital stock has no impact on Ghana's economy either in the short term or the long term.

H3. Labor has no direct impact on the pace of economic growth in Ghana, either long-term or short-term.

H4. Export has no effect on either the long-term or short-term growth of Ghana's economy.

The alternative views, however, are as follows:

H0. The expansion of the economy in Ghana over the long term has a direct bearing on the progress made in the financial industry of the country.

H1. It is critical that private-sector financing has a direct impact on the economic development of Ghana, in the short-run and in the long run.

H2. In both the short run and long run, there is a correlation between the rise in the stock of capital and the expansion of the economy.

H3. The supply and demand of labor have a direct effect on both the short-term and long-term growth of Ghana's economy.

H4. Exports have a significant impact on Ghana's economy in terms of both short- and long-term growth.

1.9. Significance of the Study

This investigation is important since it is one of the few that will be conducted on the subject. It will hopefully give policymakers more reasons to address the need for reform, particularly in the financially underdeveloped sector, which is currently undergoing a crisis of confidence, inadequate resource pooling and transfer, and a lack of loans available for investment, projects that will ultimately help the economy to grow. In

addition, the outcomes of this research will push the boundaries of knowledge in Ghana in a new and interesting direction.

1.10 Objectives of the Study

The main goal of this research is to examine how Ghana's economic growth rate has been impacted by the development of the financial sector by applying financial savings to a range of investment options. A range of various investment instruments will be used to achieve this. The majority of the effort is concentrated on this specific area since the expansion of the financial sector is so crucial to the expansion of the economy. The following is a list of some of the specific goals that the research aims to achieve:

1. To determine whether or not growth is the primary driver of financial development in Ghana by conducting an empirical study on how financial development affects the rate of its economic growth;

2. To find out if there is a long-term link between the growth of Ghana's GDP and the growth of its financial sector;

3. Find out if there is a link between the growth of Ghana's economy and the development of the country's financial sector;

4. Investigate the ways in which the gross domestic product of Ghana is increasing and the ways in which the country's economy is expanding; and

5. To investigate the connection that has been made between the expansion of Ghana's financial industry and the expansion of the economy of the nation as a whole.

1.11 Limitations

The major purpose of this research is to analyze the nexus that exists between Ghana's expanding financial sector and the economic expansion that has been made across the country as a whole. The sole topic that will be covered in this analysis is the economy of Ghana from the years 1990 to 2020. However, more variables can be used depending on the availability of data be it qualitative or quantitative once an extensive research is conducted between 1970 and 2020. In the event that more studies were carried out at any point beyond 2021, further data would be gathered. The limits of the research depend on the data that can be found, which changes from issue to issue.

1.12 Contribution to the Study

This thesis will add to the body of information that has already been created as a result of earlier investigations into the relationship between Ghana's financial sector development and economic growth. By examining whether or not the connection between the financial sector and economic development replaces or amplifies the impacts of other links, this hypothesis contributes to the body of research already done on the topic. In other words, the goal of this idea is to examine whether or not the relationship between the financial industry and economic development serves to replace or complement other relationships.

In the prior research, there have been a number of errors, and the goal of this job is to correct those flaws so that the material may be more closely associated with the required needs for more research to be carried out in Ghana. As a consequence of this study, advances have been achieved not only in terms of theory but also in terms of practice. Ghana's economy has profited from free trade, which has contributed to Ghana's rise to prominence as a significant participant in the economies of the globe.

The results of this study would be beneficial to policymakers and the government in order to design investment-friendly policies that would boost Ghana's economic growth and development and attract a substantial proportion of capital to the country's financial sector. This analysis will also assist in determining the factors that led to the amelioration of the financial sector. The findings of this investigation could help policymakers focus their efforts on the areas and types of resources that are needed to give Ghana the possible incentives that it may need.

1.13 Definition of terms

Economic growth: The term "economic growth" refers to the process through which a nation's total real national income as well as its income per capita increase over time. This particular definition of economic growth takes into consideration the following characteristics of the expansion of the economy: Because it indicates that people's living circumstances are improving, the increase per capita income is a superior way to gauge economic progress. An increase in real national income, as opposed to a rise in money income or nominal national income is what economists refer to when they talk about

growth. In other words, the increase should not only be based on an increase in the market price of existing commodities; rather, it should be based on increased production of products and services. Real income ought to steadily increase over the course of time. The increase in real national income as well as income per capita needs to be maintained throughout the course of time. Gains in income that are only experienced temporarily, such as during peak seasons, should not be confused with economic growth. The development of productive capacity needs to be the foundation for growing income:

Only if there is a sustained improvement in the economy's capacity to create goods and services can income growth rates be maintained at their current levels over the long run. This can be done by adding new or updated technology to the industrial process, improving infrastructure like transportation networks, making more power, and so on.

Economic development: The steady improvement of a society's material well-being through time is one definition of economic development. When compared to economic expansion, economic development refers to the incorporation of a wider variety of ideas. In addition to increases in national wealth, it takes into account advances in areas such as society, culture, politics, and the economy that all help to bring about material progress. Changes in resource availability, rates of capital creation, population size and composition, technological advances, skills and efficiencies, as well as institutional and organizational structure, are all included in this category. These steps help reach the main goals of making sure income is shared more fairly, creating more jobs, and reducing poverty. In a nutshell, economic development can be thought of as a long series of changes in basic supply and demand structures that, over time, lead to a rise in a country’s gross national product.

Financial sector development: is the group of organizations, products, and markets that, together with the statutory and regulatory structure, provide the exchange of goods and services based on credit. Reducing expenses across the financial system is a primary focus of growth initiatives in the financial industry. Financial contracts, markets, and intermediaries were produced as a result of lowering the costs of obtaining information, upholding agreements, and conducting transactions. A wide range of financial contracts, markets, and intermediaries have emerged throughout human history due to various types and combinations of information, enforcement, and transaction costs,

as well as various legal, regulatory, and tax regimes. The top five jobs of a financial system are: (1) getting information ahead of time about possible investments and allocating capital; (2) keeping an eye on investments and practicing good corporate governance after giving money; (3) making trading, diversification, and risk management easier; (4) getting people to pool their savings; and (5) making it easier for people to buy and sell goods and services.

Therefore, the financial sector expands when financial instruments, markets, and intermediaries function better in terms of the impacts of information, enforcement, and transaction costs, as well as when they execute the crucial tasks for which the financial sector is accountable in the economy. To put it another way, when financial instruments, markets, and intermediaries perform better, the financial industry expands.

Credit to private sector: is the term used to describe the lending of money to businesses by commercial banks and other financial organizations. These resources can come in the form of trade credits, loans, purchases of non-equity securities, and other accounts receivable. If these resources were not paid back, a claim for reimbursement would be made. There are a number of nations whose claims have been folded into those of other governments. Financial enterprises include entities such as monetary authorities and deposit money institutions. Consideration is also given to other categories of financial institutions, including those for whom there is data (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Other types of financial institutions include, for example, moneylenders, insurance companies, pension funds, financing and leasing businesses, and foreign exchange companies.

Foreign direct investment: refers to the investment It is the aggregate of equity capital, reinvestment of funds received on a net basis that are made with the intention of acquiring a long-term management interest in a business that is active in an economy that is different from that of the investor. This type of investment takes place in countries whose economies are significantly different from the investor's own. Speculative investments are made in foreign nations whose economies are quite dissimilar to those of the investor's own country. It is the sum total of equity capital, reinvestment of profits, and other long-term and short-term capital when it is discussed in the context of the

balance of payments. Additionally, foreign direct investment is a type of international investment in which an investor from one nation develops a long-term stake in and a significant degree of control over a business that is located in another economy. It is also used to talk about a foreign investor, company, or government's interest in a foreign business or project that they started. This is what is known as a "cross-border investment."

Balance of payments: The difference between the total amount of money that comes into a country and the total amount of money that leaves the country during a certain period of time is what constitutes a nation's balance of payments (e.g., a quarter or a year). People, businesses, and governments all utilize these types of financial transactions to analyze the relationship between the goods and services they purchase and the amount of money they pay for them. Both the capital account and the current account are the two parts that make up the balance of payments. The current account shows the overall level of a country's net income, and the capital account shows the overall level of net changes in who owns the country's assets.

Financial institutions: are organizations that are actively engaged in the business of providing a variety of financial services to customers who have credit, deposit, trust, or other types of financial accounts or relationships with the institution. These customers may also have other types of financial relationships with the institution. Banking institutions are often defined as companies or organizations that provide services as mediators for a variety of financial and monetary transactions. These services may take a variety of forms. These kinds of companies provide a variety of services to their clients. In a broad sense, there are three basic types of financial institutions, which may be broken down into the following categories: Depository institutions include a wide variety of financial organizations, including but not limited to banks, building societies, credit unions, trust firms, and enterprises that lend money for mortgages. Consumers may make deposits, and the businesses will manage their accounts while also providing loans to customers. Contract-based organizations, such as insurance companies and retirement funds, are examples of this kind of establishment. Investment banks, underwriters, and a variety of other types of financial organizations are all examples of investment institutions. These institutions are responsible for the management of investments. Investment institutions may be hired to handle a client's investments.

Based on how they are owned, financial institutions can be put into one of two main groups:

- Commercial banks: banks that do business
- Corporate banks: banks that work together

Some professionals in the industry are of the opinion that the majority of the world's financial institutions are moving in the direction of homogenization. Homogenization can be defined as the tendency to invest in comparable markets and pursue comparable business methods. These professionals believe that the majority of the world's financial institutions are moving in this direction. It's probable that, as a direct consequence of this, there will be fewer banks that cater to certain target groups, which may result in unmet needs on the part of smaller businesses.

Market friction: In the context of the capital asset pricing model, the term "friction" refers to anything that makes trade more difficult. Financial markets are included in this definition. This interference takes place in just two dimensions. To begin with, the frictions that exist in the financial market prompt a market player to sell their market portfolio. Because of these frictions, a participant in the market could be exposed to more or less risk than he/she would want as a consequence of his/her actions. At first glance, this definition seems to have a number of restrictions, but in reality, it is only as restrictive as the definition of the market portfolio. The term "market portfolio" is used throughout this piece to refer to different kinds of items, including but not limited to financial assets, real estate, human capital, and the time of investors. To put it another way, the frictions that exist in the financial market result in the creation of expenses that impede the bargains that are made by reasonable individuals (or would make them in the absence of market frictions). Even in markets that are very efficient, there is still the possibility of the occurrence of phenomena known as financial market frictions. Investors will really bear the costs associated with FMF, which will also provide commercial opportunities and continue to develop over time. The structure of the market has an effect on FMF.

Financial instruments: There are agreements about the exchange of money between two parties. They have the capacity to be produced, traded, modified, and agreed upon. They can be hard cash (currency), proof of ownership in a company, or the legal

right to receive or give money in the form of FX (foreign exchange), debt (bonds, loans), equity (shares), or derivatives. Cash (currency) can also be one of these things (options, futures, forwards). The asset class of financial instruments is determined by whether or not they are equity-based (meaning that they represent ownership of the issuing company) or debt-based (meaning that they represent obligations to the issuing company) (reflecting a loan the investor has made to the issuing entity). If the financial product in question is a debt instrument, then it may be categorized as either short-term (lasting less than a year) or long-term. Foreign currency transactions and instruments are put in their own category because they are not based on debt or equity.

A financial instrument is a legal contract that has a monetary value and can be written on paper or saved as a digital file.

- There are two different types of financial tools that investors can use: cash instruments and derivative instruments.
- Financial instruments can be classified as belonging to different asset classes based on debt or equity.

- Foreign exchange instruments make up a third category of their own within the realm of financial instruments.

CHAPTER II

2.0 Literature Review

2.1 Introduction

We will investigate the significance of financial systems for economic expansion as well as the linkages between the functioning of the financial industry and economic expansion. The theoretical, as well as empirical literature on the topic "The effect of the financial sector development and economic growth" will be covered in this review. Theoretical models have come to the conclusion that one of the main causes growth of financial instruments, markets, and institutions as a whole is the goal of reducing the bad impacts of high information and transaction costs. Additionally, the theory of economics suggests that variations in the effectiveness with which various financial systems cut down on information and transaction costs may have an effect on the rates of savings, investment decisions, levels of technological innovation, and rates of steady-state economic expansion. This is because information and transaction costs are two of the main agents that contribute to the overall cost of doing business. One of the areas of theoretical research that is getting a lot of attention right now is the investigation of how changes in economic activity may also have an effect on financial systems. This can have significant implications for the progression of economic growth. As a consequence of this, the financial sector plays a significant part plays a significant in each and every one of these models. More specifically, it helps bring about a decrease in the costs that are related to information and transactions. The use of these models, therefore, helps to bridge the gap that may often be seen between what are referred to as the "real" and "financial" sectors.

2.2 Theoretical framework

The phrase "financial sector development" is often used to refer to the process that involves an increase in the number, quality, and efficiency of a variety of services provided by financial intermediaries. It is likely that the expansion of the economy is connected to this process, which is comprised of the interaction of a very large number of activities and organizations. Most economists agree that the amelioration of the financial sector is one of the most significant things that contribute to economic

growth. Theoretically, there are two primary ways that financial sector development might assist in establishing a climate that is favorable for more growth, and they are as follows:

1. The supply-leading channel, in which financial development drives economic expansion, or

2. The demand-following channel, which sees a rise in demand for financial commodities in response to an expanding economy.

A substantial amount of empirical evidence lends credibility to the claim that the growth of the financial sector contributes to the expansion of the economy (Rajan and Zingales, 2003). Even though it may often be more challenging to demonstrate the direction of causation, scientific evidence consistently highlights the link between rising financial activity and growing economic activity. The evidence suggests that different indicators of financial development (such as the assets of financial intermediaries, the liquid liabilities of financial institutions, and credit to the private sector, as well as stock and bond market capitalization) are strongly and favorably related to economic growth at the level of multiple countries. This is true because credit to the private sector has a role in the relationship between different financial development metrics and economic growth (King and Levine, 1993; Levine and Zervos, 1998). The 1993 study by King and Levine and the 1998 research by Levine and Zervos. The idea of using the phrase "financial deepening" to describe the changes that have taken place in the structure of the financial system was first proposed by Edward S. Shaw in 1973. This theory says that when the current monetary system has reached a certain level of depth, the time until loans and deposits mature will be about the same.

The concept of "financial deepening" is indicative of the ratio of the money supply to GDP, claims the research that has been done on the subject. According to Ocal and Olak (1999) say that the ratio of M2/GDP is the indicator of financial deepening that is both the most common and the most useful in the real world. This is so that it can gauge how much money is really moving across the economy. This number shows how much M1 and all time-related deposits add to the GDP for a given year. Both the Keynesian and the structuralist schools of thought agree that in order for a country to achieve financial liberalization, it must first show an active commitment to the active implementation of

financial reforms. This is a prerequisite for achieving financial liberalization. Mohan (2006) says that this is the most important thing in developing countries because economic growth and financial growth can only happen at the same time as a country's financial depth grows.

According to the Keynesian theory and perspective, of financial deepening the phenomenon of financial development occurs resulting in a rise in the amount of money spent by the government. This understanding of financial deepening comes from the Keynesian perspective. In order for the government to realize its objective of reaching full employment, it ought to raise the total amount of money it spends, which would result in the introduction of more funds into the economy. The increase in aggregate demand, which in turn is generated by a rise in government expenditure, which raises both total demand and income, is the root cause of the need for more funding (Fischer and Dornbusch 1978).

As stated by Shaw (1974), the term "financial development" is one that is frequently used by people who specialize in the expansion of the economy. It is referred to the increased availability of financial services as well as the provision of a broader range of services that are intended to appeal to all levels of society. In addition to this, it is a reference to the macroeconomic repercussions that deeper financial markets have on the economy as a whole. Again, the word "financial deepening" may also refer to a higher ratio of the money supply to the gross domestic product or some price indicator. Also, it is a phrase used to refer to money that may be changed into other forms with relative ease. A domestic financial system that has been fully liberalized will not have any controls on the interest rates that are charged for lending and borrowing money; it will also not have any controls on credit, which means that there will be no subsidies given to specific industries or certain credit allocations.

Both of these are hallmarks of a system that does not have adequate credit controls. In addition to that, deposits may be made using a diverse range of other currencies as well. When a stock market has been liberalized to the fullest extent possible, there are no restrictions placed on the ability of international investors to buy local shares. In addition, after the first two years, the investor is allowed to freely repatriate any earnings, including principal, dividends, and interest. As stated by Schmukler and Kaminsky (2003),

comprehensive financial emancipation happens when at least two of the three distinct industries have been expanded as well as the third has been liberalized only partially. In other words, comprehensive financial munificence is achieved when all three sectors have been liberalized. Since the early 1970s, the experiences of both developed and developing nations have served as the basis for this particular method of defining financial liberalization. It does this by using indices that show the trend (Schmukler and Kaminsky, 2003) on the subject of financial liberalization in both developed as well as less developed countries.

It is difficult to generalize about signs of financial deepening since various economies and nations have their own distinct sets of indicators. Also, it is likely that various financial markets have varying degrees of financial depth in their respective marketplaces. The fact that this is the case should not come as a surprise. For instance, nations that are better equipped to efficiently manage their own financial system have greater financial depth ratios. The percentage of a nation's assets that are owned by the financial markets of industrialized nations is significantly higher than the percentage that is held by developing countries. Gross national product is the term used to describe the total value of all of a nation’s goods and services produced in a year. The percentage of a nation's population that puts away more money as time goes on is one of the most significant indices of the amount of economic enhancement that the nation is experiencing. As a direct consequence of this rise in the nation's overall savings, financial savings will rise, and savings that were previously created as physical assets with poor yields will be turned into financial assets with a higher return. In addition, in order to make the markets that already exist more productive, there will be a flow of money away from markets that are fraught with danger and disorganized and into markets that already exist.

The idea that better financial development is connected to faster rates of economic growth is not a new one, but it has been floating around for a while now. According to the results of the research that has been carried out in the field of economics and published in scholarly publications, there are a number of distinct schools of thought about the ways in which the financial system has an impact on how the economy is growing. In order to bolster their theories about the expansion of the financial industry and the expansion of

the economy, Sylla (1969) and Davis (1965) offered actual empirical evidence. Despite the fact that Gurley-Shaw (1955), Schumpeter (1911), and Bagehot (1873) were the ones who first set these correlations into motion, this is the case.

According to Patric (1966), it is possible to establish two distinct causal linkages from the expansion of the financial sector to the expansion of the economy. These two causal chains make sense. The demand-following technique, the first point of view, contends that in addition to the expansion of actual production, the demand for financial services also depends on the commercialization and modernization of agricultural and other industries that rely on subsistence. Since investors and savers created a need for these services in the real economy, the establishment of contemporary financial institutions, their financial assets and liabilities, and the associated financial services are all responses to that demand. This demand was for the services that modern financial institutions provide.

According to this point of view, the faster the expansion of real national income, the more the demand that businesses will have for external funds (the savings of others), and as a consequence, there will be a greater need for financial intermediation. This is because the demand for external funds will be proportional to the rate of expansion of real national income. This is due to the fact that the need for cash from outside sources will be proportionate to the pace at which the actual grows. This is because enterprises would often be less able to utilize retained earnings and internally produced depreciation allowances to support growth. For the same reason, for a given rate of aggregate growth, the larger the variation in growth rates across various sectors or industries, the greater the requirement for financial intermediation to shift savings from slow-growing industries and from people to fast-growing businesses. This is so that savings may be transferred from people and from fast-growing sectors to slow-growing ones, and vice versa. This is a result of the fact that financial intermediation has a role in facilitating the transfer of savings from sectors experiencing moderate development to others experiencing fast expansion. As a result, the international monetary system is able to support and maintain the industries that have proven to be the most successful, even as these industries expand. In this particular case, the expansion of the economy is what triggers the development of the financial system.

Patrick posits a second connection between the amelioration of financial sector and the expansion of the economy. This link, which he refers to as supply-led, is described by Patrick as follows: (1966). The first objective of supply chain management is to redirect resources away from traditional industries that are experiencing sluggish expansion and toward contemporary industries that are experiencing rapid development. The second objective of supply chain leadership is to encourage and boost entrepreneurial activity within these contemporary industries. This suggests that the formation of financial institutions and the services that they offer takes place prior to there being a need for either of those things. So, the fact that it is easy to get financial services contributes to a rise in demand for these services among entrepreneurs who run businesses in modern sectors that help businesses grow.

As a result of the so-called "new theories of endogenous economic growth," which have led to new conclusions, the link between economic growth and the rise of financial markets has gotten a new boost. In these models, it is considered that the ways in which people save money have a direct influence not just on the levels of equilibrium income but also on the growth rates. Because of this, the connection that previously existed between growth and the enhancement of financial sector has been given a novel lease on life, which may have a significant effect on the economy as a whole. According to Hermes (1994), the new growth theories and the financial liberalization theory are both predicated on the premise that changes in financial conditions lead to increases in economic activity. This is the fundamental premise that underpins each of these different ideas. Murinde and Eng (1994) and Luintel and Khan (1999) have said, on the other hand, that one part of endogenous growth models shows that economic growth and financial development affect each other in two ways. They based their assertions on the observation that endogenous growth models contain a component that demonstrates that endogenous growth models have been around for a long time (Kar and Pentecost, 2000), which they used to back up their claims.

There is a significant amount of disagreement among economists who have won the Nobel Prize and other prestigious awards over the role that the financial industry plays in the growth of the economy. There is a collection of papers that were written by the "pioneers of development economics," which is a group that includes three people who

have won the Nobel Prize In economics. These pieces do not even mention money (Meier and Seers, 1984). Robert Lucas, who was conferred the Nobel Prize in Economics in 1988, believes that the function of finance has been "over-stressed," and as a result, he does not consider it to be an essential component of economic progress (Joan Robinson (1952, p. 86). He is credited with making the famous statement that "where entrepreneurship goes, money follows." When seen from this perspective, the financial sector is not the primary driver of economic expansion; rather, the “financial sector” changes on its own to satisfy the varying demands that are generated by the "real" economy sector. In contrast, Nobel Laureate Merton Miller contends that the financial system hypothesis should not really be called a theory at all (1988, page 14). It is impossible to take the suggestion seriously since it is so self-evident that more activity in financial markets is beneficial to the economy.

Gurley and Shaw (1955), Schumpeter (1912), Goldsmith, and Begehot (1873) are only a few of the writers that arrived at the same conclusion. McKinnon (1973, and Hicks (1969) have all disproved the notion that the finance-growth connection is something that can be proven or can be disregarded without significantly impairing our ability to comprehend how the economy is expanding. All three of these studies tried to show that the link between money and growth is not something that can be proven or ignored.

If we can put an end to the dispute and make significant strides ahead in our knowledge of the part money plays in the expansion of the economy, then it will be much simpler to pick between the many different theories about how the expansion of the economy occurs. Additionally, details on the significance of one's financial situation in relation to the process of expansion will be discussed. It matters a great deal how thoroughly academics explore the aspects that impact the consequences of and the development of an infrastructure for the administration of the financial sector. It is possible for policy to be influenced by gaining a better grasp of relationship that occurs between financial markets and expanding economies. The choices that are made about public policy are influenced in many ways by legal, regulatory, tax, and macroeconomic policies. Given that the primary purpose of this research is to examine the practical aspects of economic expansion and financial industry development, it is vital to note that it would be interesting to find out if recent improvements in Ghana's banking sector have helped

the country's economy to grow. In point of fact, the whole of this chapter is devoted to putting a focus on this particular point.

The question of whether or not growth in both the economy and the financial sector is really essential to forward movement is one that has been the subject of discussion for quite some time now. Those who subscribe to the supply-leading finance hypothesis assert that that the growth of the economy is not only a consequence of the amelioration of the financial industry but also a significant factor in what causes economic development. These individuals believe that this is to be the case because they believe that supply leads to financial development (Schumpeter, 1912; Gerschenkron, 1962; Hicks, 1969). Despite this, Patrick (1966) was the one who came up with the term "supply-leading" in order to explicitly elucidate the significance of finance and money as causal factors in the evolution of economic growth. In order to explain the phenomenon known as "supply-leading," he provided the following explanations: "the establishment of financial institutions and the supply of their financial assets, liabilities, and related financial services prior to the demand for them, particularly the demand for entrepreneurs in the modern, growth-inducing sectors. “He asserts that Supply-leading finance serves two essential goals that are potentially helpful to the growth of the economy. To begin with, it redirects resources away from traditional industries that aren't productive and into emerging industries that are more productive. This helps increase overall productivity. This function of transferring resources may be carried out by financial intermediaries either via the mobilization of savings or by the formation of credit and the compulsion of savings. Both of these options are viable ways to fulfill this job. Also, the modern sectors listed above benefit from having more entrepreneurs because supply-led financing encourages and stimulates this kind of activity.

Arguments made by supply-side economics may be generally arranged into two schools of thought: (1) the structuralist and (2) the repressionists (Sinha and Macri, 1999, pp. 5–6). Structuralism is a school of thought that holds that the amount and composition of financial variables are the major drivers of economic development. Structuralism is a school of thought that has been around since the 1930s. They contend that this expansion is the result of direct gains in savings expressed in the form of financial assets, which, in turn, give birth to capital creation and, eventually, economic development. Because of

this, factors like financial deepening, depends on (the depth and amount of aggregate financial assets compared to GDP and the composition of aggregate financial variables for the expansion of the economy.

In contrast, the McKinnon-Shaw hypothesis, which is sometimes called the "McKinnon-Shaw hypothesis (1973)," says that economic expansion can be helped by financial liberalization in the form of a positive real rate of return on real cash balances. They believe that more people will be persuaded to invest there if there is a positive real rate of return on real cash holdings. They argue that a low or negative real interest rate would discourage saving, which would reduce the amount of loanable capital available for investment and hence growth. According to the McKinnon-Shaw model, a more liberalized financial system—one with lower interest rates and fewer limitations on bank lending—would encourage greater saving and investment, which in turn would spur economic development. These forecasts are based on the presumption that a more liberalized monetary system would be characterized by liberalized interest rates and the elimination of limits on bank lending. This assumption underpins the basis for these projections. But both structuralists and financial repressionists agree (Levine, 1997) that the money that is already in circulation needs to be managed well if the economy is to grow steadily over time.

The supply-leading concept has been challenged by the assumption that finance development depends on economic expansion. From this point of view, the growth of the economy is necessary for the development of the financial sector. One school of thought contends that the expansion of the financial industry is because of an increase in the demand for the services it provides from real economy investors and savers. Robinson (1952) proposes that the amelioration of finance naturally pursues economic expansion due to the fact that the need for financial services that are created by economic expansion emerges throughout the course of time. He holds the view that success in business must come first before any monetary success can be anticipated (Robinson, 1952, pp. 86–87). In the theory that he dubbed "Demand Following" and published in 1966, Patrick extended this notion even further and presented further reasons in support of it. He reiterated that the new financial system is being shaped not just by the current institutional framework and the present economic environment, but also by the human motivations,

attitudes, tastes, and preferences of the people. This statement was made in the context of how the current economic climate and the current institutional framework are contributing to the formation of the new financial system. As a result of this, the development of the sector of the economy requires both the ongoing the enhancement of the financial system as well as the maturity of the market place. Both of these developments are necessary in order to fulfill the requirements of the expansion. This will end in a rise in the possibilities for getting capital for the aim of encouraging investment and decreasing risk, which will, in turn, feedback to promote actual growth. To put it another way, this will be a case of positive feedback loops that will lead to true expansion.

Since Schumpeter's fundamental study in 1911, as well as recent studies by Goldsmith (1969), McKinnon (1973), and Shaw (1984), the connection between financial development and economic growth has attracted a lot of interest in the field of economic research. This has always been the case since 1911, as well as recent studies by Goldsmith (1969), McKinnon (1973), and Shaw (1984), the connection between financial development and economic growth has attracted a lot of interest in the field of economic research. Schumpeter's theory from 1911, which is widely seen as the first framework for analyzing the finance-led growth hypothesis, says that a good financial system will promote technological growth by moving resources from sectors that aren't producing anything to sectors that are. According to universal consensus, this framework is the first one that may be used to examine the finance-led growth theory. To put it another way, a sound financial system has a direct bearing on the expansion of the economy. This line of reasoning is analogous to Patrick's Supply-Leading Hypothesis, which was first presented in 1966. Patrick (1966) makes the case that the establishment of a vibrant financial sector may stimulate According to universal consensus; this framework is the first one that may be used to examine the finance-led growth theory. To put it another way, a sound financial system has a direct bearing on the growth of the economy. As a result, the inauguration of financial markets as well as the provision of the services linked with them far in advance of the demand for such things would expedite the expansion of the non-financial (real) sector in according with the trajectory it is already following. This will take place when limited resources are shifted from spending units that have a surplus to spending

units that have a deficit. This will be done based on which spending units will earn the highest return on investment from the resources that are moved.

Robinson (1952) and Patrick (1966) both provide an alternative viewpoint that is in opposition to the thesis that the expansion of the economy is driven by the accumulation of monetary wealth. Both the growth-led finance (Robinson, 1952) and the demand-following (Patrick, 1966) hypotheses contend that a developing financial sector is a corollary of the demands of the expanding real sector of the economy. Both of these ideas are based on the idea that the services of the financial sector will be in high demand when the real sector (the economy) is doing well. The growth-led finance hypothesis was developed by Robinson, and the demand-following hypothesis was developed by Patrick. Both hypotheses were published in their respective Robinson developed and first published the growth-led finance theory in 1952. Patrick devised the demand-following finance concept, which was first published that same year, in 1966. Both theories were conceived in separate fashions.

Other writers who have made significant contributions to the body of scholarly work on the topics of finance and economic growth and development include Goldsmith (1969), McKinnon (1973), and Shaw (1973), for instance. On the other hand, McKinnon and Shaw (1973) stressed the significance of financial liberalization in terms of its capability to increase domestic savings and, as a consequence, investment. In contrast to this, the research by Goldsmith (1969) focuses, for instance, on the connection between the growth of financial markets and the success of investments. In many developing nations, including Ghana, the financial sector was liberalized as part of the structural adjustment program run by the International Monetary Fund and the World Bank, and it is important to note that the 1973 works by McKinnon and Shaw played a significant role in laying the groundwork for this.

It is important to emphasize that, despite the fact that different theories have been put forth in the academic literature regarding the direction of causality between economic growth and financial development, they have all come to the same conclusion—that there is a materially positive relationship between the two—regardless of the fact that the theories have all been developed. Or to put it another way, this is the reason why there is a strong and favorable correlation between economic growth and financial development

(Chee-Keong and Chan, 2011). Numerous studies that are now accessible in the corpus of published research provide an empirical examination of the relationship that exists between financial depth and economic development. There are several ways to obtain this research, both online and in print. The results of this study, which looked at how financial stability and economic growth are related, revealed conflicting results about the cause and direction of causality.

However, the bulk of research that relies on cross-sectional and panel data comes to the conclusion that the expansion of the financial sector contributes to economic growth. This is true even after accounting for additional growth-influencing variables, possible biases brought on by simultaneity, omitted variables, and unobserved country-specific effects on the finance-growth nexus. It has been shown that all of these kinds of mistakes may occur in the relationship between money and growth. To put it another way, even if there are several other factors that affect growth, this is still the case (Khan, 2008; Gelb, 1989; Khan and Senhadji, 2000; King and Levine, 1993a, 1993b; Levine et al., 2000). For instance, in a study done on 71 countries between 1960 and 1995, the researchers used indicators of financial development like the ratio of liquid liabilities to nominal GDP, the ratio of assets of deposit money banks plus domestic assets of the central bank, and the ratio of credit issued to private enterprises to nominal GDP, and they came to the conclusion that there was a positive nexus between financial development and economic growth.

2.3 Empirical analysis

Early empirical studies used the case study method to correlate the growth rates of different countries with varying levels of financial development, such as those conducted by the International Monetary Fund (1983) and by McKinnon (1973). Numerous studies, including those by Jung (1986) and Odedokun (1992a), among others, examine the relationship between economic development and the level or expansion of financial intermediation. Others have embraced the method of examining the effects of financial intermediation variables (such as the growth of real money balances and financial depth) in the equations that characterize economic development, including Fritz (1984), Jao (1976), and Lanyi and Saracoglu (1983). Other recent empirical studies that employed a

strategy similar to the one described above include Roubini and Sala-i-Martin (1993), Ghani (1992), King and Levine (1993a, 1993b), Odedokun (1992b), and Gertler and Rose (1991). The majority of this research has shown the positive effects of financial intermediation on economic development or growth.

Relationship between Financial Sector Development and Economic Growth: The stability of the financial sector is crucial for the expansion of the economy. This aspect, which is an integral component of the process and has a substantial impact on it, facilitates the conversion of savings into investments in a significant way. Banks are able to contribute to the ongoing maintenance of economies with a balanced distribution of resources by giving deposits to businesses that create value. In several countries throughout the world during the last ten years, the financial industry has seen tremendous growth. The transformation in this industry was brought about by the adoption of deregulatory measures, privatization, and openness. This resulted in the discovery of a large amount of new information about the importance of recent financial sector developments to a country's economic growth.

There is now debate over whether improvements made in the financial sector have contributed to sustainable development in underdeveloped nations or if the rate of growth will result in improvements made in the financial sector. It is true that a strong financial system that is established, effective, structured, and financially stable is a necessary condition for any country's economic growth. This is so because each of these traits helps to keep the financial system stable. The banking industry's efforts were a major factor in the economy's expansion, which was fueled in large part by the aforementioned contribution and played a crucial role in the execution of development initiatives. During that time, countries with up-to-date banking systems and vibrant stock markets had faster rates of economic development than those with more lagging financial systems.

Furthermore, it is impossible to exaggerate how crucial the financial sector is to the increased mobilization and utilization of savings. The financial sector takes advantage of these resources to expand the quantity of cash accessible by offering a variety of financial products. These tools were developed to satisfy the various demands of lenders and borrowers in their various industries.

Relationship between Credit to Private Sector and Economic Growth: "Credit to the private sector" refers to the distribution of financial resources by financial institutions to the private sector in the form of loans, acquisitions of nonequity securities, trade credits, and other accounts receivable, all of which give rise to a demand for repayment of the credit. Both monetary authorities and organizations that handle money deposits are seen as being parts of the financial sector. Also indicated below are more financial institutions for which data may be acquired (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Moneylenders, pension funds, foreign exchange firms, financing and leasing firms, insurance firms, and insurance companies are all other types of financial businesses.

Consumers who have access to more credit are able to borrow money and increase their spending, whereas businesses that have access to more credit are able to borrow money and increase their investments. Along with raising firms' income and profits, rising consumption and investment levels also result in the creation of new employment. The rise in credit also affects the prices of assets, which raises the total net value of those assets.

The economy cannot expand without a comparable rise in credit availability. As a result, it has been shown that there is a connection between GDP and credit. Private individuals, retail customers, and commercial enterprises are all given credit. An essential part of the way that money is transferred is through the use of credit. It makes it simpler to finance capital growth, capital consumption, and production—all of which have an impact on economic activity.

Relationship between Capital Stock and Economic Growth: In addition to other assets used in production, what economists refer to as "capital stock" includes things like factories and equipment. It is calculated in a company's financial records by summing the prices at which the company's common stock and preferred stock were initially offered to the public. The level of production in a nation is directly correlated with the size of its stock of physical capital. Therefore, given that all other variables remain constant, a country with more physical capital will produce more goods than one with less. The stock

of capital will be larger and there will be more room for economic expansion if more money is saved for use and investment in the future.

Relationship between Labor and Economic Growth: Productivity gains and overall economic expansion are essential components of every economy. This is because the availability and quality of labor resources, in addition to the technologies that are used, are directly tied to the level of productivity achieved by workers. As a consequence of this, labor productivity has an important effect on both the production process and the cost of production. Additionally, the cost of manufacturing has an effect on a nation's ability to compete in the international market. In the process of generating the commodities and services that make up an economy, labor stands in for the human element. This often leads to salary increases in a number of different businesses. The rise in the productivity of the economy's factors would make it possible for the economy to produce more goods.

If the real GDP continues to expand at a greater speed than the increase in labor productivity, then employment will continue to rise. If job growth continues to surpass population growth, we should see a decline in the unemployment rate. An increase in labor productivity is required for employment expansion to be productive. The growths of the labor force as well as an increase in worker productivity (which can be quantified as output per hour worked) are the two fundamental forces behind the expansion of the economy. Both may increase the size of the economy, but only high productivity growth may raise GDP and pay levels for people.

Relationship between Export and Economic Growth: There has been much discussion among economists who focus on economic development over whether or not a rise in exports is correlated with economic growth. There are things besides a rise in exports that could cause the economy to grow, and vice versa. As stated by the research that underpins growth theory, increasing a country's exports is the single most important factor in bringing about economic growth. There have been a lot of different ideas proposed to try to explain the connection between these two aspects. To begin with, a rise in total exports has a multiplier effect on total factor productivity development since it speeds up the rate of capital production. Second, higher exports cause restrictions on foreign currency to be

loosened, which makes it simpler to import capital goods and boosts the pace of economic growth. Third, international competition ensures a pricing system that promotes effective resource allocation and enhances the pressure on exporting industries to maintain low prices and advance technological innovation, all of which contribute to the growth of the economy. As we have seen, this seems to point to the fact that exports are beneficial to the economy.

The empirical research on finance and growth examines the effects of the financial system's operation on economic growth, as well as whether or not those effects are economically significant and whether or not specific financial system elements, like banks and stock markets, are particularly crucial in promoting growth at particular stages of economic development. The design of the empirical data highlights a critical shortcoming in the academic literature on finance and economic growth, namely that there is often insufficient precision between theory and measurement. The problem is that theory and measurement aren't always clearly related. The concept highlights several functions that are carried out by the financial sector, including information supply, corporate governance requirements, facilitation of risk management, fund pooling, and ease of trade. The theory also examines how choices concerning resource allocation and economic expansion are impacted by the aforementioned functions.

Measuring the scale of financial institutions like stock markets and banks is the main focus of the vast majority of empirical research. The opposite is also true, as shown by Petersen and Rajan (1997) and Demirguc-Kunt and Maksimovic (2001), who found that firms often act as financial intermediaries by extending trade credit to rival companies in the same sector. This technique is rather common. This source of financial intermediation may be very important, especially in nations where financial intermediaries are subject to regulatory restrictions and in nations with immature legal systems that do not adequately support the development of formal financial markets. This demonstrates that in many published studies on finance and growth, the link between theory and measurement is not as strong as it may be.

Despite the fact that many people have taken note of this problem, methodological issues have been the source of the vast majority of the most important advancements in empirical studies of finance and growth. The discussion will be organized around several

econometric research methodologies. Even though significant progress has been made in figuring out how to measure financial development, further study that more directly combines ideas from theory with data would help us understand the relationship that exists between the growth of the financial sector and economic expansion much more thoroughly. Even if there had been great progress in figuring out how to assess financial development, this would still be the case.

For a specific number of nations, empirical research by a small group of economists (Goldsmith, 1969; McKinnon, 1973) has shown a strong correlation between the growth of a nation's financial system and its economic progress. These conclusions are based on an examination of data gathered from several nations. Other studies, such as those by Khan and Lintel (1999) and M'rad (2000), looked at several potential reasons why financial development and economic growth are correlated. They noticed that the two distinct criteria had a significant correlation or link. Numerous studies were conducted, and each one used a unique set of variables to examine the financial sector's present status.

Using two independent metrics of financial development, Jao's 1976 research evaluated the idea that there is a connection between the growth of the financial sector and economic expansion. These indicators included the rise in real money holdings per person and the proportion of the entire stock of broad money. He planned to investigate the impact of these measures on the pace of economic growth in 67 different countries, including both developed and developing nations, between 1967 and 1972. His inquiry would encompass both developed and developing nations over a period of time. After analyzing data from all 67 countries, the researchers arrived at the conclusion that the relevant policies had a positive impact on economic development. But when each developing country was examined separately, it became clear that the growth rate of the real GDP per capita had a big influence on the results.

Using data on more than 80 countries from 1960 to 1989, King and Levine (1993) examine the relationship between higher levels of financial development and higher rates of economic growth. They are investigating both options in order to determine whether or not this link can be attributed to causation. They sought to ascertain if higher financial development levels were significantly and substantially associated with both past and

present rates of economic growth, capital accumulation, and advancements in economic efficiency. To assess the quality of services provided by a variety of different financial intermediaries, they developed three measures of financial development using the following metrics: They tried to do this by comparing and evaluating how well the different financial intermediaries did their jobs.

They were initially planned to be included in the calculation of the more conventional financial depth assessments. The ratio of liquid liabilities to GNP, which indicates the size of the financial intermediary system as a whole, is comparable to this. Two, they would be taken into account in a study of the situation of the economy as it was at the time. Demand deposits and other interest-bearing liabilities held by financial intermediaries, such as banks and non-banks, are also included under the phrase "liquid liabilities," in addition to cash kept outside of the banking system. In other terms, any obligations that may be readily turned into cash are referred to as "liquid liabilities." By comparing the importance of deposit banks to that of the central bank in terms of the distribution of domestic credit, they also distinguish between the various categories of financial institutions that engage in intermediation. This aids in their comprehension of the variations among the many categories of financial organizations that take part in intermediation. As a result, students are better able to comprehend the differences between the various categories of financial firms that engage in intermediation. Third, they look at how the assets are distributed across the financial system using two different metrics: the proportion of total credit granted to non-financial private firms and the percentage of GDP attributed to non-financial private companies' credit. These two metrics are shown as percentages of the overall credit value.

Demirgue-Kunt and Vojislav tested the hypothesis in their 1996 study using microdata to see if the notion that the development of the financial sector has any bearing on economic growth was true. They estimated the percentage of businesses whose rate of expansion exceeded the rate that could have been sustained entirely by the company's own resources and discovered that there were a sizable number of these businesses. A cross-country regression was conducted, and one of the findings of the study was that this percentage has a favorable relationship with both stock market turnover and a gauge of law enforcement. The companies themselves provided the data that was used to calculate

this percentage estimate. To put it another way, greater access to resources—which can be attained through the use of financial markets—is directly related to greater economic development.

Numerous empirical studies have been done on the subject of the causal relationship between the expansion of the financial sector and the expansion of the economy. This topic has attracted a lot of interest in recent years. According to Goldsmith (1969), the expansion of the financial sector may be related to the expansion of the economy. However, he did not examine the direction of the causal link that exists between the two variables and used a fairly basic indicator and measure for the expansion of the financial sector (deposits as a percentage of GDP). The findings of King and Levine's (1993) analysis show that all of the financial development indices and overall economic growth have a strong correlation (a link that moves in a positive direction). Another strong connection between economic growth and the development of the banking system and the stock market was discovered by Levine and Zervos in 1996 and 1998. Rajan and Zingales have also made a strong case against the financial industry growth indicators and, consequently, the research causality, as seen in the work of Levine and Zervos. Most of the criticism leveled by these two economists has been directed at Levine and Zervos' work. They looked into the possibility that the same factor, such as, for instance, the rate at which people save money, might be responsible for both the growth of the financial sector and the economy. This was one of the subjects that came up during the conversation.

The vast majority of the research that has been conducted over the last few years has used the core framework of time-series modeling. The results of this study do not definitively address whether or not the development of the financial sector contributes to the expansion of the economy as a whole. The groundbreaking finding that the long-term causation between the financial sector and economic growth may differ from one nation to the next was made by Arestis and Demetriades in 1997. This discovery is regarded as a significant addition to the study of economic growth. Using the causality approach, Shan et al. (2001) discovered previously unseen evidence. Using data gathered from five organizations for economic growth and development nations at the same time as significant industrialization was occurring in each of those countries, Rousseau and

Wachtel (1998) performed a study on the subject (1871–1929). They found an abundance of data that suggests a one-way causal relationship between monetary policy and economic development. On the other hand, Neusser and Kugler (1998) concluded from their study of OECD countries between 1960 and 1993 that improvements in the financial sector do not significantly affect the growth of the economy. Their conclusions were supported by the fact that the OECD countries went through a period of significant economic expansion between 1960 and 1993. Through their dynamic panel analysis, Beck et al. (2000) demonstrate that banks have a considerable impact on the growth of the economy, both directly and indirectly. This influence might have a positive or negative impact. In addition, Leahy and his colleagues found in 2001 that there is a substantial and positive association between the amount of investment made and the rate of economic growth.

Rousseau and Watchel (2005) reexamined the finance-growth hypothesis using information spanning the years 1960 to 2003. They came to the conclusion that the relationship between the coefficient of M3 as a percentage of GDP and the coefficient of private sector credit had broken sometime between the years 1985 and 1989 and 1990 and 1994, respectively. Many developing nations had a rapid phase of financial liberalization and opening up to the world market during this time, most notably those in Latin America. As a result, economic development opportunities in these countries were available from 1960 to 2003. They came to the conclusion that the relationship between the coefficient of M3 as a percentage of GDP and the coefficient of private sector credit had broken sometime between the years 1985 and 1989 and 1990 and 1994, respectively. Many developing nations had a rapid phase of financial liberalization and opening up to the world market during this time, most notably those in Latin America. As a result, opportunities for economic development in these countries become available. Rousseau and Watchel (2005) came to the conclusion that, in the absence of stable financial institutions, financial liberalization may be counterproductive and provide perverse incentives for banks to behave in an imprudent manner. This was the result of their research on the breakdown of the empirical relationship between finance and growth. These conclusions came from their research on the empirical connection between finance and growth. This is the outcome of a breakdown in the empirical connection that formerly

existed between finance and economic development. Risky lending practices might seriously harm or even destroy the local financial system if they result in unpaid loans, a shortage of liquidity, bankruptcies, and capital flight.

According to Patric (1966), whose research was cited by Levine (1997), there is a relationship between financial growth and economic success that goes both ways. This relationship might be thought of as a feedback loop. Since then, a significant amount of empirical research has been done to determine whether or not this idea is true. As a result, literature has seen the growth of two major trends throughout its history. The first thing that has to be looked at is whether or not growing financial development levels are related to rising economic growth levels. To do this, it will be required to choose a single indicator of the latter and then test it using cross-sectional or panel analysis across a number of countries (Erdal et al., 2007). The second pattern included using time series data and techniques to examine the viability of the hypothesis for a particular country. This was carried out to evaluate the validity of the hypothesis. These efforts were made for Ghana by researchers like Murinde and Eng (1994). Odedokun achieved a similar feat for Nigeria in 1998.

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On the basis of the writings of Bagehot (1873), Schumpeter (1912), Gurley and Shaw (1955), Goldsmith (1969), and Mickinnon (1973), recent research was conducted by King and Levine (1993a and 1993b), Demetriades and Hussein (1996), Levine (1997), Demirguckunt and Maksimovic (1998), Wachel (2003), and Demetriades and Andrianova (2004). According to research, nations with well-developed financial systems—particularly those with large, privately owned, and controlled banks that lend to the private sector and (ii) liquid stock markets—have better rates of economic growth. This is particularly true for nations where there are large, privately run banks that provide loans to the private sector. This is especially true in countries with sizable privately owned and operated financial institutions that also lend to the private sector. It has been shown that both the rate of financial sector growth and stock market liquidity have a favorable impact on the development of the economy. Second, an effective banking and monetary system may help to mitigate the consequences of external financial constraints, which act as a roadblock to the growth of businesses and sectors. The development of the financial sector may have an impact on the economy's expansion in a variety of ways, one of which is the accessibility of money coming from sources outside the country. This is because its (Levine, 2003) version of Erdal et al.'s, which was launched in 2007, makes it simpler for businesses to expand when they otherwise would not have had the chance to do so.

Testing is done by Bakhouche (2007) to see whether there is a one-way relationship between the development of Algeria's banking sector and the country's overall economic growth. The ratio of real gross domestic product to population is often looked at as an indicator of economic advancement. Other ratios are used in addition to this one, such as total domestic credit to GDP, M2 to GDP, and government spending to GDP. The results show that there is neither evidence of a short-term link between the development of Algeria's financial sector and the country's overall economic growth nor any likelihood that there would be a long-term relationship. This understanding may be drawn as a result of the investigation's results. He reasoned that the previous system of central planning in the country, in which the government controlled all economic decisions, may have contributed to this. He reached this conclusion as a consequence of the fact that this system had an enduring impact on how the country's economy operated. He ultimately came to the conclusion that Algeria would need more time before it could

fully benefit from the reform and liberalization of the financial sector, as well as the competition amongst providers of financial services.

Researchers Alaoui Monstain (2004) and Bakhouche (2007) have looked at the potential connections between Morocco's finance sector expansion and the country's overall economic expansion. The ratios of liquid liabilities (M3) to GDP, domestic credit provided by the banking sector to GDP, and domestic credit extended to the private sector to GDP are used as measures of financial development. They use real GDP as a measure of growth. The relationship between the development of the economy and the measures of liquid liabilities and domestic credit, as well as between the expansion of the economy and credit given to the private sector, has been shown to be causal. The relationship between the growth of the economy and the credit given to the private sector has also been established. There is evidence to imply that the growth of the economy and the financial indicators that follow it have a consistent link over a long period of time. He said that the financial reforms implemented in Morocco in the 1990s did not seem to have produced an amount of savings sufficient to encourage profitable investment and, as a consequence, long-term development. He asserted this because he was unable to locate any supporting data for his allegation. Given that Morocco's economy witnessed considerable changes in the 1990s, he held this opinion. After giving it some more consideration, he came to the conclusion that adjustments to the appropriate laws and institutions may be necessary in order to achieve the goal of this money mobilization.

Richard Sylla (2005) reinforced the notion that advancement in the financial sector propels economic growth by emphasizing that countries with the most developed financial systems ultimately become the richest countries, according to one of his hypotheses. This was one of the justifications Richard Sylla offered for the notion that advancements in the finance industry boost economic growth. This was one of the arguments Sylla made in favor of the idea that improvements in the financial sector drive economic development. The United States of America has the most developed financial sector of any country as a direct result of this, and as a direct result of this, it also has the greatest per capita income of any country. By the beginning of the twentieth century, Japan had seen a financial revolution that had brought its economic development on par with that of the western industrialized countries. At least in part, the remarkable acceleration of China's and India's

economic development, which has brought them close to the level of growth seen in the rest of the world, may be linked to the development of their respective financial systems.

Damar et al. (2006) assessed the relationship between financial development and economic growth in Turkey using data gathered at the provincial level from 1996 to 2001. The time elapsed between the two time periods was the subject of their inquiry. It was shown that financial deepening (i.e., a rise in the total deposits to GDP ratio) has a direct and significant influence on the growth rate of real GDP per capita with the use of both traditional OLS and dynamic panel GMM methodologies. This was shown by demonstrating how a rise in the ratio of total deposits to GDP results in an increase in the ratio of total deposits. On the other hand, the data showed that financial development had a negative correlation with economic growth, in contrast to the bulk of previous cross-country studies in their body of work. This was discovered despite the fact that most previous cross-country research showed a positive correlation between economic growth and financial development. The findings of the bulk of the previous cross-country studies that have been done are in sharp contrast to this one.

The withdrawal of deposits from the provinces as a result of Turkey's financial deepening prevented the real estate industry from obtaining the financing it needed to execute investment projects. This occurred as a result of the real sector's inability to access deposits in the provinces. It is not difficult to imagine that financial deepening may have helped economic development in the provinces rather than throwing them into a catastrophic crisis if the banking system had been functioning well throughout this time. Therefore, it is not difficult to believe that, had it happened at this time, the banking sector would have continued to run smoothly throughout. They came to the conclusion that it is crucial to highlight the possibility that financial depth measured in terms of bank ownership may distort incentives, undermining growth in both public and private banks. Because of this, before firm conclusions are made on the adverse relationship between financial expansion and economic growth, the development of the financial sector may be the topic of independent research. The financial sector serves as the hub of productive activity in an economy since it plays such a significant role in the economy as an intermediary, a supplier of payment services, and the pivot for implementing monetary

policy. The contribution of the financial industry to overall economic development has long been recognized.

It has been suggested that if the financial sector is established and strong, it may be able to serve as a catalyst for economic growth. 2007 (Adeoye). The rise in the number of bank branches that have been created as a direct consequence of the financial sector reforms that have been undertaken has resulted in an increase in employment possibilities. As a consequence of these advancements, the market's ability to provide chances for large-scale investors to make money that can be used to support projects that will be carried out over a lengthy period of time has also improved. Financial institutions provide a wide range of financial mediation activities, which link savers to one another in a network. The financial sector, which serves as the main engine of economic development, is in charge of transferring savings from economic units that have surpluses to those that have deficits. This aspect has recently directly contributed to a rise in productivity across the board in all of the economies around the globe. The level of development of the financial system is one of the most important factors to take into account when assessing the effectiveness and productivity of financial intermediation. The financial services sector is now in charge, and its current principal concentration is on the delivery of short-term loans rather than long-term investments. This offers financial organizations, especially banks, a considerable competitive edge over their competitors.

Some of the first studies on the subject of this article were conducted by Goldsmith (1969), who is credited with doing so. He examined data from 35 nations between 1860 and 1963 and came to the conclusion that there is a positive relationship between economic growth and financial development over time periods as long as several decades. He examined the statistics, and this was the outcome. In his study, the ratio of financial intermediaries' assets to the whole gross domestic product was calculated to measure the degree of financial development. This gave a snapshot of the nation's degree of financial development. Given that each variable has an impact that could be seen by the others, Goldsmith's research leads one to believe that the question has not been resolved. By pointing out that the majority of financial development occurs in the early phases of economic growth when the nations involved have modest levels of wealth, Goldsmith

(1969) makes the comment in an attempt to address the conundrum. It was noted to help in the puzzle-solving process.

The research of Besci and Wang (1997), who point out that while financial development does occur and may precede economic expansion, it is not certain that it provides causation in an economic sense, seems to refute this school of thought. De Gregor and Guidotti (1995), who highlighted that over time, the linkages between financial development and economic growth are substantial in the early stages of development, but they weaken or even vanish for OECD nations, corroborated the findings of Goldsmith (1969). Additionally, they show that as nations advance toward the level of economic development they have reached, the impact of financial development on growth decreases. This may be because it is difficult to determine how properly a country's financial development is being judged, or it may be because less developed countries are more affected by financial intermediaries than more developed ones are. The information that Wachtel and Rousseau (1998) gathered added to the evidence that this theory was accurate.

In four of the economies that are generally regarded as having undergone financial revolutions over the course of the past century, the banking and securities markets played a significant role in the process of industrialization as well as the expansion of commercial activity, according to the findings of a study that examined five industrialized economies when they were in the early stages of development. Rousseau and Sylla (1999) investigate the historical significance of finance in the United States from 1790 to 1850 in a study that is somewhat similar to this one. They come to the conclusion that there is strong evidence supporting growth driven by finance. Students will narrowly concentrate on the time period from 1790 to 1850 over the course of their inquiry. Additionally, Rousseau (1999) investigates the Meiji period of Japanese history (1868–1844) and concludes that the financial sector was crucial in accelerating Japan's phenomenal expansion before the First World War. The goal of this study was to shed light on the crucial function that the financial sector performs in contemporary society. The purpose of the second phase of the inquiry is to learn how a company employs an organic growth strategy.

Using an overlapping generation model, Bencivenga and Smith (1991) show how an intermediation sector enables an economy to both avoid the misallocation of invested

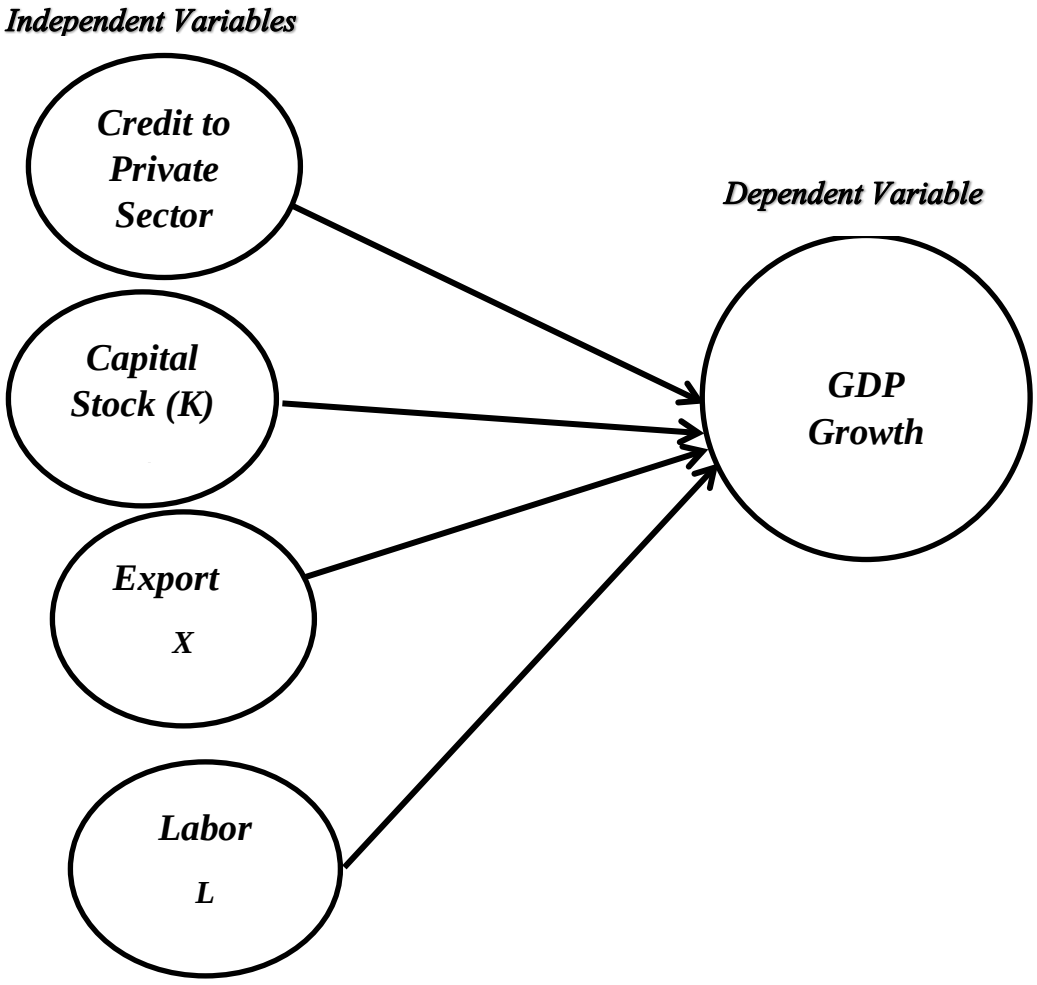
capital owing to liquidity demands and minimize the percentage of savings maintained in the form of unproductive liquid assets. This is shown by the fact that by using an industry that serves as an intermediary, an economy is able to reduce the percentage of its savings held in the form of unproductive liquid assets. Because of this, an increase in the total amount of capital is one of the requirements for the economy to expand. Using a general equilibrium-based technique, Greenwood and Jovanovic (1990) came to the conclusion that as savers gain confidence in the capacities of various financial intermediaries, they invest a larger portion of their savings with these intermediaries. In two endogenous growth formation models used by Greenwood and Smith (1997), they find that money is sent to the highest-valued user through banks and stock markets. This finding may be explained by the incorporation of endogenous growth formation in Greenwood and Smith's models.

One of the biggest issues is deciding which financial development indicator should be utilized, along with figuring out whether or not there is a link between the growth of the financial sector and the expansion of the economy. Depending on the many connections that exist between the "real" economy and the "financial" sector of the economy, the choice of variables may provide a variety of results. Some of the measures that King and Levine (1993a and 1993b) used were the liquid liabilities of banks and non-bank financial intermediaries (currency plus demand and interest-bearing liabilities) over GDP, bank credit over the total of bank credit, domestic assets held by central banks, credit to private enterprises over GDP, etc.

The cross-sectional dataset, on the other hand, is unable to satisfactorily address the causality issue because it does not allow examination of the phenomenon in question from multiple angles at the same time, as shown by Arestis and Demetriades (1996). They also show that King and Levine's causal interpretation is statistically fragile. Later, Arestis and Demetriades (1997) used time series analysis to draw the conclusion that there is evidence for a causal link between financial development and economic growth that is both one-way and two-way. In the instance of Singapore, evidence of this bi-directionality was also discovered by Demetriades and Hussein, as well as by Murinende and Eng (1994). These scholars were concentrating on sixteen distinct developing countries in all. Similar to this, Luintel and Khan (1999), who investigate the relationship between finance

and growth using a multivariate VAR model, come to the conclusion that there is a causal relationship between the expansion of the financial sector and the expansion of the economy in each of the countries they examine.

Conceptual Model



CHAPTER III

3.0 METHODOLOGY

3.1 Introduction

In this section of the research, a more in-depth discussion is held on the several strategies, methods, and processes that were used in order to collect the data that was required for the study. This was done for the purpose of achieving the research's goals. In order to obtain the necessary information, these techniques, methods, and processes were used. Throughout the course of the research, several statistical approaches were used, and this section analyzes and explains how those methods were used to assess the data that was collected. These procedures were used in order to ascertain whether or not the data was pertinent to the investigation. Several different ways will be used to look at the information that was collected during the research.

3.2 Sources of data and kinds

The majority of research initiatives, in order to arrive at their final findings, depend on two distinct types of data: theoretical knowledge and data analysis, which are frequently used in order to reach at those conclusions. The researcher who authored this study relied on the same methodology as the author of the study that came before it. It is essential to use the World Bank Data Center as a resource in order to get quantitative data for a wide range of different components and parts. The project will continue to gather data on an annual basis for the next 31 years, starting from 1990 and going all the way through 2020. It is necessary to conduct research throughout a long length of time in order to get results that are more reliable and accurate. For example, credit to private sector, capital stock, and GDPP expansion should all be investigated.

Table 3.1 Variables description

	Variables	*Abbreviation*	*Measurement*	*source*
	GDP per capita	*GDPP*	*(constant LCU)*	*World Bank*

	Domestic credit to private sector	*CPS*	*(% of GDP)*	*World Bank*
	Net capital account	*K*	*(BoP, current US$)*	*World Bank*
	Labor force	*L*	*Total*	*World Bank*
	Exports of goods and services	*X*	*(% of GDP)*	*World Bank*

3.3 The evaluation of variables

The World Development Indicators database, which is accessible online and can be read by anyone, was searched for the information that was employed in this investigation. Depending on which of the two variables this information pertained to, either the independent variable or the dependent variable was used to make a determination. In order to provide an accurate evaluation of the state of the economy, we didn't only take into account the rate of expansion of GDP per capita but also gave credit to private sector, capital stock, labor, and exports as independent variables. This allowed us to arrive at a greater understanding of the situation of the economy for the period under review. The following are some of the aspects that we looked at when doing the investigation:

GDP per capita: The gross domestic product (GDP) divided by the population at the midyear point yields the GDP per capita. The gross domestic product (GDP) is calculated at purchaser's prices by adding any product taxes and subtracting any subsidies that are not included in the value of the items. This gives the GDPP at purchaser's prices. It is computed without making any deductions for things like the depreciation of manufactured assets or the exhaustion and deterioration of natural resources. The information is presented in its consistent native currency.

Credit to private sector: refers to the financial resources that banking institutions make available to the private sector. It's possible that these resources will come by way of loans, acquisitions of trade credits, non-equity securities, or other account receivables. It is possible that some nations' claims include credit for state businesses as well. Financial

entities include regulatory bodies for the money supply and banks that accept deposits of currency. Additional financial institutions for which statistics are accessible are also included in this report (including businesses that do not take transferrable deposits but that do incur obligations associated with time and savings deposits). Financial firms are businesses that offer financing and leasing, money-lending services, insurance, pension funds, and businesses that deal in foreign currencies.

Capital stock: is a word used to refer to the total number of common and preference shares that an organization has the authority to disburse among its shareholders. This authority is granted by the corporation. The company is only allowed to issue capital stock, which is also the only kind of stock that may have shares issued, and the number of shares that capital stock represents is the maximum number of shares that can ever be in circulation. It's possible that the amount is listed in the same section of the company's balance sheet that is dedicated to shareholders' equity, if that is where you look for it.

There is no guarantee that the number of shares that are available or approved is the same as the number of shares that are "outstanding," which is the term often used to refer to the number of shares that have been distributed to investors. Outstanding shares are those that have been issued but are still available to shareholders, while authorized shares are those that a firm is legally permitted to issue as capital stock. The term "stock" may apply to either of these two categories of shares.

A firm may choose to issue new shares of capital stock in order to raise money rather than take on further debt and the interest payments that come along with it. This is one option available to the company. The company would be required to issue new shares, which would result in a loss in the value of each share that is currently in existence due to the business having to issue additional shares. One of the negative aspects is that this occurs.

Investors are considered to have made a contribution to the firm in the form of capital when cash is collected by a company via the issuing of capital stock. On the balance sheet, under the stockholder's equity part of the company's financial statements, this cash is shown as both paid-in and accrued capital. Both of these categories fall under the heading "paid-in capital."

Calculating the common stock balance involves taking the stock's nominal value, or par value, and multiplying it by the number of shares of common stock that are presently owned by investors. The nominal value of a company's stock is an arbitrary sum that is allocated for reasons linked to the balance sheet when the firm issues shares; this amount is often one dollar or less. When a corporation issues shares, the nominal value of each share is typically one dollar or less. The present price that may be found on the market is irrelevant in every possible manner.

Labor force: A person is regarded as being part of the labor force if they are either employed or unemployed but actively seeking employment, are at least sixteen years old, and is a member of the civilian population that is not institutionalized. An estimate of the number of people who are either employed or unemployed among those who are engaged in the labor force is computed by the Local Area Unemployment Statistics Program. In other words, the term "labor force" refers to both the number of individuals who are working and the number of individuals who are seeking employment. The rate of unemployment is determined by taking the entire number of people who are actively seeking work and dividing that number by the total number of persons who are taking part in the labor force.

A person is considered to have a paid job if they put in at least one hour of labor for compensation or at their own business on any day of the week, including the fifteenth day of the month, at any time of the day or night. People who work in a family-owned company for a minimum of fifteen hours without getting paid are also considered to be employed by that company. Included in this figure are those who are considered to be employed even if they may be temporarily absent from their jobs for a variety of reasons, such as vacation, illness, bad weather, or other personal matters. People who work part-time, which is defined as less than 35 hours during the survey week, or full-time, which is defined as 35 hours or more during the survey week, are both considered to be members of the employed group.

Export: The word "export" refers to movable goods that are made inside the boundaries of one nation and then transferred to another nation for the purpose of trade. The development of the economy of the nation that produces these goods as a consequence of their sale in that nation results in the creation of revenues in a currency

different from the currency of that nation and supports the economic expansion of that nation. When there is an increase in demand from other countries, the proportion of a nation's gross domestic product that is comprised of exports will determine the size of the boost that will be provided to overall growth. This boost will be proportional to the amount of demand that has increased from other countries. The state of the economy in other countries, as well as price, how people perceive the quality of the product, and how trustworthy the supplier is, all play a role in determining the level of demand for exports. Trade restrictions, such as tariffs or quotas, and subsidies, both at home and in other countries, may have a considerable influence on the capacity of a nation to manufacture products and transfer those items out of the country. This may be the case both domestically and internationally.

3.4 Model specification

Pesaran et al. (2001) are credited with developing the autoregressive distributed lag paradigm, which has had significant uptake in the years since its introduction. Throughout the course of the investigation, we used these tactics. When compared to other econometric models available as a potential solution to the problem at hand, the ARDL model is regarded as the preferable option when the variables at issue are either stationary at I(1), I (0) or integrated of order I. In circumstances in which the ARDL model is seen as the most advantageous option, this is the circumstance that applies (1). This model is superior to others in that it is able to capture both the short-run and the long-run influence of independent factors on economic output. This was one of the goals of the research, and it is one of the reasons why this model is superior.

The ARDL approach, which is acceptable for the creation of both the immediate and the far future elasticities for a small sample size at the same time, is based on the ordinary least squares methodology for cointegration across variables. This method was developed to analyze the relationship between multiple variables.

Because the sequence in which the variables are integrated may be changed at any time throughout the process of modeling, an ARDL model offers an increased degree of flexibility. The application of ARDL is effective when the independent variable in the model is I (0), I (1), or mutually cointegrated (Frimpong & Oteng, 2006), but the

application of ARDL is unsuccessful when any of the variables contain I (0). (2). The following model, which was made so that it could find the link between variables that depend on each other and those that don't, is made up of,

$$InGDPt = InCPSt + InKt + InXt + InLt + ECt$$

Whereas GDPP stands for gross domestic product per capita

CPS is the credit to private sector

K stands for capital stock

L is labor force

X is the abbreviation for export and

The error term is written as EC, and "in" means that the function depends on both determining and dependent factors.

3.4.1 The importance of the ARDL model

The cointegration approach developed by Johansen and Juselius (1990) cannot be utilized in situations in which there is already one cointegrating vector. Pesaran and Shin (1995), as well as Pesaran and others (1999) developed a technique for cointegration that is known as the autoregressive distributed lag method. Because of this, it is essential to do research on the bound process for a long-run connection (1996b), regardless whether or not the underlying variables are I (0), I (1), or a combination of both. Both of these procedures were proposed by Pesaran and Shin (1995). The use of the ARDL technique in the study of cointegration will, given certain particulars, provide estimates that are not only practical but also plausible. When compared to the cointegration method proposed by Johansen and Juselius (1990), they created the autoregressive distributed lag method for cointegration, which allows for the determination of the cointegrating vector. That is to say, each of the underlying variables can be viewed as an independent, time-dependent connection equation. If it is possible to find a single cointegrating vector, which is sometimes called the underlying equation, then the cointegrating vector's ARDL model can be changed so that it becomes an ECM.

The reparametrized result may be used to learn about both the long-run and short-run dynamics of the variables using just one model, also known as a standard ARDL. Since these structures share so many similarities, it is possible to re-parameterize the

ARDL equation, which represents a single dynamic model. A model is said to have a distributed lag if it includes an unconstrained lag of the regressors as part of the regression function. This is the only thing that is necessary for this to be the case.

This approach to assessing cointegration gives us the specific information that we need to establish whether or not the model's underlying variables are cointegrated, provided that the endogenous variable is given careful thought. In contrast to that, the ARDL approach to cointegration cannot be used in circumstances in which there are several cointegrating vectors since it is not relevant. Therefore, the method that Johansen and Juselius (1990) suggested may be considered an alternative. In the following sections, we are going to talk about the conditions that need to be met in order to use this technique, as well as how to put it into action.

3.4.2 Stationary test

$$Y_t = U_{t-1} + \epsilon_t$$

It is essential to emphasize the fact that the Epsilon variation, which is also referred to as epsilon on occasion, is a stationary random disturbance term in the context of this specific scenario. According to the equation that came before it, the value of the prediction does not change throughout the course of time for the series y. This is true regardless of the passage of time. The equation that came before it suggests that the variability of the y-series, as measured by the standard deviation, is increasing as more time passes. The initial difference in y is similarly stationary, which makes sense considering that the arbitrary walk itself is a distinct Stationary series. The phrase "stationary series" refers to a group of series in which the mean and autocorrelation are not affected by shifts in the amount of time that has passed since the starting of the series. On the other hand, non-stationary series are characterized by the fact that shifts in the total amount of time have an effect on both the mean and the autocorrelation. The fact that stationary series do not react to changes in the period of time over which they are measured is one way to recognize them (Gujarati and Porter, 2009).

It is possible that we will be able to ascertain whether or not it is stationary if we evaluate the series that is being questioned and decide whether or not the series is stationary. If the variable in question does not exhibit stationary behavior, then we may

deduce that the related series does not exhibit stable behavior either. If a series' mean, covariance, variance, and any other properties stay unchanged during the course of observation, it is feasible to draw the conclusion that the series is stationary. This is one of the conditions that must be met. To put it another way, the passage of time does not adversely affect the series in any way. The nature of the series will not shift in any way; it will still remain dynamic after the adjustment has been made, regardless of whether or not it is really made. It is quite rare to hear terms such as "unit root" and "non-stationary," along with other terminology that is virtually the same, used interchangeably. Other terms that are almost identical include: "before a time series can be used for forecasting purposes, it must first be stationary," which is a well-established fact in the field. In order to create projections for a time series, this step is required to be completed.

This holds true for all distinct types of progression through time. In this thesis, the Augmented Dickey-Fuller and Philips-Perron tests were utilized in order to ascertain whether or not the variables that were being investigated belonged to a stationary state. Newer iterations of each of these exams have superseded prior iterations that were previously available. It is strongly suggested that a significance threshold of 5% be chosen as the initial point of departure for any inquiry that is supported by statistical evidence. If we think about the following equation in the climate of an arbitrary walk, we may come up with the following instance of a non-stationary series:

$$U_t - U_{t-1} = (1 - L)\, U_t = \epsilon_t$$

In order to demonstrate that their idea was correct, Dickey and Fuller (1979) developed and tested their hypothesis using a computer program. The computer software is able to ascertain if a variable has a unit root or not and whether or not it has been put through an a priori random walk. In his article, "Hamilton (1994) outlines four potential situations in which the extended Dickey-Fuller Test may be used to demonstrate its use and efficacy." The purpose of this presentation is to provide examples that highlight how applicable the test is. The supposition behind the null hypothesis is that the variable in issue, regardless of the conditions, possesses just one unit root ay each and every point in its distribution. This is the basis for the null hypothesis, which states that this is the case.

The key differences between the two approaches are whether or not a drift term is part of the null hypothesis and whether or not a Constant term and a temporal trend are

combined into the regression that is utilized to yield the test statistics in the second approach. These are the factors that determine if a drift is considered while determining the null hypothesis. When comparing the two approaches, it is essential to determine if a drift term is incorporated in the regression that produces the test statistics. This may be done by checking to see whether or not a drift term is integrated into the regression. These considerations decide whether or not a drift term ought to be incorporated into the null hypothesis. The Dickey-Fuller test is quite similar to this one; the main difference between them is that the Dickey-Fuller test is performed on the model instead of the reverse, as was the case with the test that was carried out before this one. This was demonstrated to be the case in the test that was carried out before this one.

3.5 ADF UNIT TEST

$$\Delta yt=\alpha + \beta t+ \gamma yt-1+ \delta 1\Delta yt-1+\cdots+\delta p-1\Delta yt-p+1 + \varepsilon t$$

When utilizing this method, it is possible to construct increased-order autoregressive processes due to the fact that the ADF formulation incorporates delays of order p. Prior to the test being used on the data, the time between the two occurrences, or "lag," p, must be calculated.

3.6 ARDL BOUND TEST

We use the autoregressive distributed lag cointegration strategy as a generic vector autoregressive model of order p in Zt, where Zt is a column vector made up of the five variables: Zt = (Yt Kt Lt Ft Tt) in this case. ARDL is an abbreviation that stands for autoregressive distributed lag, which is also referred to as autoregressive distributed lag cointegration. As a consequence of this, we have the opportunity to do empirical research on both the long-term associations and the more recent dynamic interactions that exist between the variables of interest (L, CPS, labor, capital stock, X, and economic growth). Pesaran and Shin (1999), together with Pesaran and their coworkers, were the ones that came up with the idea for the ARDL cointegration technique (2001). It is distinct from the other techniques in that it possesses three distinguishing characteristics. As a result, it is superior to more establish and earlier approaches for cointegration. The fact that using the ARDL does not need integrating all of the variables that are the subject of the study

in the same sequence is the primary benefit of doing so. Instead, it can be utilized in situations where the underlying variables are integrated fractionally, integrated to order 1, or integrated to order 0. This is because it does not depend on the sequence in which the integration steps are performed. This is due to the fact that the ARDL does not mandate that all of the variables that are the subject of the investigation need to be integrated in the same sequence. The second good thing about the ARDL test is that it works a lot better when the sample sizes are limited, such as when they are very small.

The ARDL can show how different financial sectors affect economic growth in the following ways:

$$InGDPt = InCPSt + InKt + InXt + InLt + ECt$$

3.7 Diagnostic and Stability tests

Although it is heartening to see that more applied empirical research is being conducted on the factors that influence financial development, a significant portion of this research is hampered by a lack of statistical diagnostic testing. This is true despite the fact that it is encouraging to see more applied empirical research being conducted. In the stochastic specification of econometric models, it is common practice to make the assumption that the error terms will follow. If the mean of the normal distribution is 0, then the distribution will be serially correlated, have a constant variance, and be in order to verify the extra information, diagnostic tests are used to test the assumptions that the models are based on. When the presumptions that form the basis of a statistical model are not disproved in any manner, we say that the model may be considered valid. In the event that this is the case, the actual distributions of common test statistics will not depart from those that are anticipated for them. If this is not the case, then the inferences that are drawn from the data will not be credible, and the tests of economic theory will not have statistical validity. Additionally, the predicted elasticities will not have statistical validity. Because of this, most econometric research has come to the same conclusion: the final econometric model needs to be put through strict statistical tests to see if it is statistically valid.

There is a vast selection of diagnostic tests accessible in many different implementations, and each of these tests is designed to accomplish a specific goal in its own right. In the next section, we'll give an overview of these tests, paying special

attention to how important they are to the field of an applied investigation into the expansion of the financial and economic sectors based on empirical evidence.

The following tests look at whether the data are normal, how well they fit together, and whether they are spread out in different ways. It is not unheard of for nonlinear models to deal with the problem of parameter instability (Saliminezhad et al., 2018). As a direct result of this, in order to assess whether or not the findings are valid, it is required to conduct an analysis of the estimated model that was utilized. To carry out this analysis, we make use of a test that was devised by Brown and his colleagues and is referred to as the CUSUM of squares test (1975). During the process of estimating, the model's consistency must be reviewed and double-checked at all times; the amount of importance that you place on the post-estimation test is entirely up to you (Hansen, 2000).

The Cusum tests, which are an element of the method of multiple linear regression analysis, are utilized in order to check the consistency of the coefficients. In order to draw conclusions, it is necessary to compute and consider not only the sums of recursive residuals but also the sums of squares of recursive residuals. Standardized one-step-ahead prediction errors are another name for the recursive residuals that are produced on a consistent basis from nested subsamples of the data. Recursive residuals are made in this way. The fact that there are numbers that do not fall within the sequence's projected range is evidence against the null hypothesis, which states that the parameters have remained unchanged. Illustrating how the model's internal organization has changed over time disproves the hypothesis that the parameters have remained the same.

CHAPTER IV

4.0 RESULTS AND DISCUSSIONS

4.1 Introduction

In the first section of this chapter, you will be presented with a synopsis of the findings obtained from the research. After this, there will be a discussion about how business in the financial sector has affected the economy of Ghana, and a discussion of the ways in which academics have appraised the importance of these influences. This section provides a lot of attention to descriptive statistics and various techniques for data analysis, both of which were explored in great detail in the early part of this research. This section also spends a lot of time on different types of graphs and charts. After that, we will investigate and discuss the stationary test applied to data collection, and then after that, we will look at and discuss co-integration, which will be a different segment. After that, we will discuss the co-integration test of data collection and look at several examples of it. The stationary test for a data set is going to be the topic of discussion and examination in this section. Not only will diagnostic tests and tests to establish whether or not the data or findings have stayed stable be reviewed in length in the final part, but regression analysis will also be covered in this section. Even though there was this problem, the collection of data and all of the tests done with the E-Views program passed with flying colors.

4.2 Stationary test

The term "stationary series" refers to a group of series where autocorrelation and the mean are unaffected by shifts considering how much time has elapsed since the starting of the series. In other words, the mean and autocorrelation of a stationary series don't change over time during the course of the entire series. One way to recognize a stationary series is that it does not modify its behavior in response to variations in the length of time (Gujarati and Porter, 2009). If we take a closer look at the series, we might be able to determine whether or not it is consistent and then base our judgment on that finding. Since the series that is being discussed does not remain stationary, we can deduce that it, too, does not remain stationary. If the mean, variance, covariance and any other characteristics of a series remain the same over the course of time, it is likely to draw the

conclusion that the series is stationary. This is because it is easier to draw conclusions about stationary series than about non-stationary ones. In other words, the passage of time does not have a detrimental effect on the series in any manner.

The nature of the series will not change; it will maintain its status as one that is not static in any case, regardless of whether the adjustment is implemented. It is quite unusual to hear terms such as "unit root" and "non-stationary." In addition to this, other languages that are practically identical are used interchangeably. It is commonly known that before a time series can be used for the purpose of prediction, it must possess stationary behavior. It is impossible to generate accurate projections for a time series without first doing this. This is the case regardless of the kind of time series that is being analyzed. For this thesis, the Augmented Dickey-Fuller as well as Philips-Perron tests were made used of. The goal of this thesis was to determine whether or not the variables that were under analysis were stationary. More current iterations of each of these exams have superseded prior iterations of the same test. If you want to start a study based on statistics, it is best to use a significance threshold of 5% as a starting point.

4.3 Unit Root Test

Table 1.1 Unit root

ADF UNIT ROOT TEST			
VARIABLES	**LEVEL**	**1ST DIFFERENT**	**ORDER**
GDPP	0.9831**	0.0375	I (1)
CPS	0.9655*	0.0000	I (1)
K	0.6140*	0.0001	I (1)
L	0.5191*	0.0007	I (1)
X	0.2873*	0.0000	I (1)

Source: *Schwarz info criterion; 1%*, 5%** and 10%****

A unit root test is required to rummage if data from a time series is stationary. It is crucial to make an evaluation about whether the variables that have been observed are stationary, in which case they have an If the variables exhibit characteristics of a random

walk with a unit root or if, after being subjected to a shock, they revert to following the long-term trend, then we may claim that the model is resilient. If, after a temporary or permanent shock, the variables revert to their random walk condition, then the association between the variables is seen to be spurious (Amiruddin, nor, and Ismail 2007). The Grauss-Markov theorem states that these sorts of scenarios are examples of circumstances in which the series at issue does not have a finite variance. Because of this, the OLS won't be able to come up with estimates that match the parameters.

With this, our findings demonstrate that all of our variables are stationary, with the only exception of GDP per capita, which is stationary at a level with a p-value of 0.0375. This demonstrates that GDPP is the only one of our variables that is not stationary. The other p values are as follows: CPS = 0.0000, K = 0.001, L = 0.0007, and X = 0.0000, respectively.

4.4 ARDL Bound Test

Table 1.2 Bound tests

Model	Lag.	F-Statistics	Decision
GDP, CPS, K, L, X	(4, 4, 4, 4, 3)	10.05418***	Co-Integration Exist
Bond Critical Value			
		I (0)	I (1)
Sign.	10%	2.2	3.09
	5%	2.56	3.49
	2.5%	2.88	3.87
	1%	3.29	4.37

****at a 1% level of relevance critical value boundaries are given by Pesaran et al. (2001), utilizing the Akaike Information Criteria, at a level of significance of 5%, **, and 10%, respectively (AIC).*

The ARDL technique's bound test, which was developed in order to identify whether or not the data collection under examination contained any examples of co-integration, was used. This allowed for the successful completion of the investigation. When the F-statistics are lower than the lower bound (critical values for I = 0), the null

hypothesis cannot be refuted. This indicates that the data do not support the alternative hypothesis. This is a result of the fact that the key values are lower than the limit that is set lower than them.

On the other hand, the null hypothesis, which asserts that there is no cointegration, will not be taken into account in any further investigation if the statistics are higher than the upper limit I (1). This indicates that the test is considered inconclusive if it can be shown that the test statistics fall within the range of potential results. This may be proven by showing that the test statistics fall within the range of possible outcomes. The result of the F-statistics (10.05418) shows that we should not accept the null hypothesis and instead come to the determination that the independent variables and the variable that weas the subject of the study have a link that has persisted through time. The validity of the result is not affected by whether or not the level of significance is set at 5% or 10%.

4.5 ARDL Long-run

Table 1.3 ARDL Long runs

Variable	Coefficient	Std. error	t. statistic	Probability
CPS	0.0337	0.0093	3.6007	0.0114**
K	-3.08	5.24	-0.058	0.9550**
L	9.12	3.43	2.65	0.0377**
X	0.000	0.001	0.535	0.6116**
C	15.762	3.987	3.953	0.0075

Source: *Akaike Info criterion; 1%*** 5** 10*significant*

According to the results of our investigation, the probability that the financial sector will contribute favorably to the growth of GDPP is statistically significant over the long-run, with a level of significance of 5% and a positive coefficient of 0.033. This finding is supported by the fact that this probability has a positive coefficient. According to the findings of this research, the hypothesis that positive contributions to GDP per capita growth may be attributed to the financial sector has statistically substantial support. The findings of our investigation provide support for this line of thinking. This would imply that, over a longer time horizon, the expansion of the financial sector contributes to rather than fully replaces the increase in the GDPP. This would show that it complements the growth of the financial sector. This is correct due to the fact that complements and

replacements are two entirely distinct concepts. This suggests that a boost in GDPP expansion will ultimately lead to a rise in the CPS of 0.0337% over a predetermined amount of time. This would suggest that, over a longer period of time, the increase in CPS serves more as a supplement to the growth in GDP per capita rather than as a replacement for it. Specifically, this would mean that the growth in CPS complements rather than replaces the growth in GDPP. There is a chance that the improvement seen in Ghana's economy is connected in some way to the discovery made here. This leads us to the conclusion that there is a significant association between the financial sector and the GDPP over the long run, with a significance level of 5%.

This leads us to the conclusion that there is an important association/relationship between the financial sector and the GDPP over the long run. In view of the material that has been presented in this article, the conclusion that there is no impact should not be accepted. In contrast, the capital stock satisfies the criteria for statistical significance at the level of for statistical significance at the level 5%, despite the fact that the coefficient is -3.08 and the outcome has a probability of 0.955. This indicates that the "null hypothesis" ought to be falsified, and the appropriate conclusion ought to be that growth in GDP per capita and a rise in the stock of capital both have positive impacts over the course of time. It has been concluded that exports are statistically insignificant at the 5% level since the probability is 0.611, which is higher than the threshold of 0.05.

4.6 Short-run ARDL

Table 1.4 ARDL Short run

Variables	Coefficient	Std. error	t. statistic	Probability
CPS (1)	0.005	0.001	3.132	0.0073**
K (1)	-9. 03	2.96	-3.050	0.00086
D(L)	7.09	2.61	2.719	0.0166***
X	-0.001	0.00	-2.645	0.0155
ECM (-1)	-0.109	0.015	-6.872	0.0000

Source: *Akaike Info criterion; 1%*** 5** 10*significant*

The influence that CPS has had on the growth of the economy of Ghana may be observed in the table that is shown below. The results show that there is a statistically

essential likelihood that GDP per capita will respond to CPS at a rate of 10%, but the probability of that is just 0.0073%. The CPS has a coefficient and an impact that are both on the positive side. The coefficient of credit to private sector sensitivity is expected to increase by 0.005 percentage points as a result of Ghana's continued economic development. As a consequence of this, we are led to the realization that there is a connection between the variables in the immediate future, and as a consequence of this, we determine that the null hypothesis is invalid. It is statistically significant to give credit to the private sector at the D-CPS (-1) level at the 5% level with a probability of 0.0073. Also, the amount of work, which was represented by the letter "L," stayed at 5% with a probability of 0.01.

We concluded that there is a positive impact between variables in the short run or that there is a positive connection between variables in the short run as a consequence of rejecting the null hypothesis, which claims that there is no relationship between the variables. In light of this, we came to the conclusion that factors either have a short-term positive effect or short-term positive associations. Export has a negative but significant impact on GDP per capita in the short-run in Ghana. Our variables' rate of change from the short run to the long run is 10% that of the transition's overall rate of change.

4.7 Residual Diagnostic tests

Table 1.5 Residual Diagnostic tests

Name of the Test	The Null Hypothesis result	Statistics value	Probability
Serial Correlation Test	There is no serial Correlation at up to two lags.	1.2211	0.1769
Jarque-Bera Examination	Normally, residuals are usually dispersed at 5% level.	0.5715	0.7514
White (CH-sq) Test	No conditional heteroskedasticity at 5%	2.4961	0.7073

The results of this study's residuals suggest that no normality, heteroscedasticity under certain conditions or serial correlation can be found. These findings are all distinct from one another. These data show a normal distribution, which is in agreement with what was discovered in the residuals, which also show the same thing.

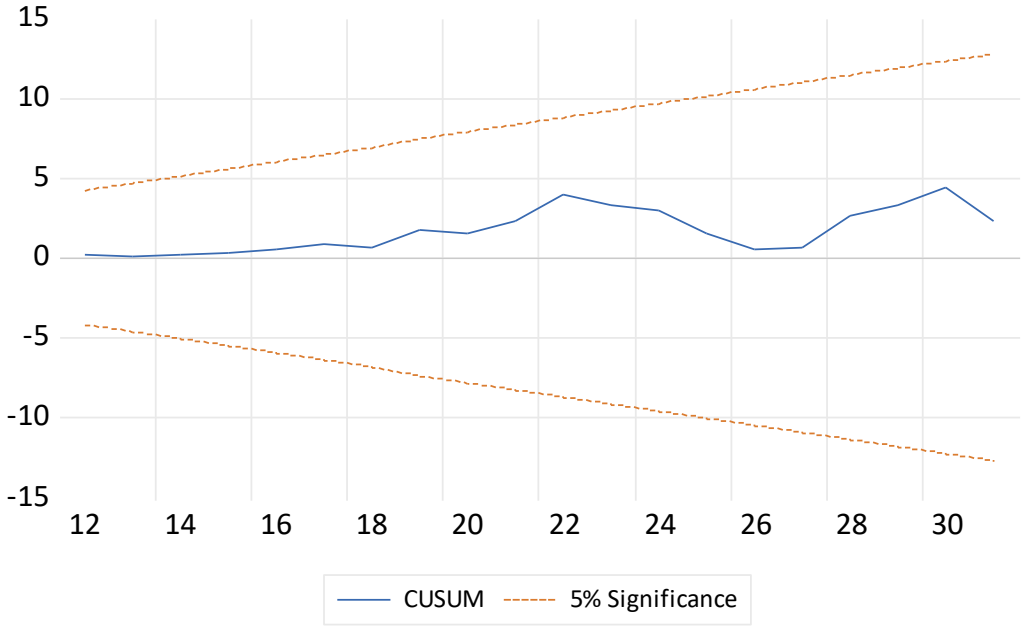
According to the findings of the experiment, which were interpreted using the null hypothesis, there is no such thing as a serial correlation. The results of the experiment that were based on the alternative hypothesis, on the other hand, imply that the model has serial correlations in its components. The value of the likelihood, 0.1769, is higher than the threshold, which has been determined to be 0.05%. Because of this, we've decided that the model doesn't have any serial correlation, which supports our decision to accept the null hypothesis.

To be more explicit, the findings of the test for heteroskedasticity provide evidence in favor of the null hypothesis, which asserts that the model does not display heteroskedasticity at the 5% level but becomes stationary at the 10% level; the fact that the probability value of 0.7073 exceeds the 0.05 percent threshold, which indicates that the disease is more severe, may be determined from the residual diagnostic tests. This finding suggests that the ailment is further advanced. Because of this, we can't say that the model doesn't behave in a way that is heteroskedastic based on the 5% significance level needed to reject the idea that there is no difference.

The evidence for the null hypothesis suggests that the residuals do not follow a normal distribution at the 5% level of significance. On the other hand, the evidence presented in favor of the alternative theory suggests that the residuals do conform to a normal distribution. The Jarque-Bera probability of 0.7514 exceeds the necessary threshold of 0.05 percent. We thus infer that residuals follow a regularly distributed distribution at 5% but do not become significant until they reach 10%, rejecting the null hypothesis.

4.8 CUSUM TEST

Figure 1.1



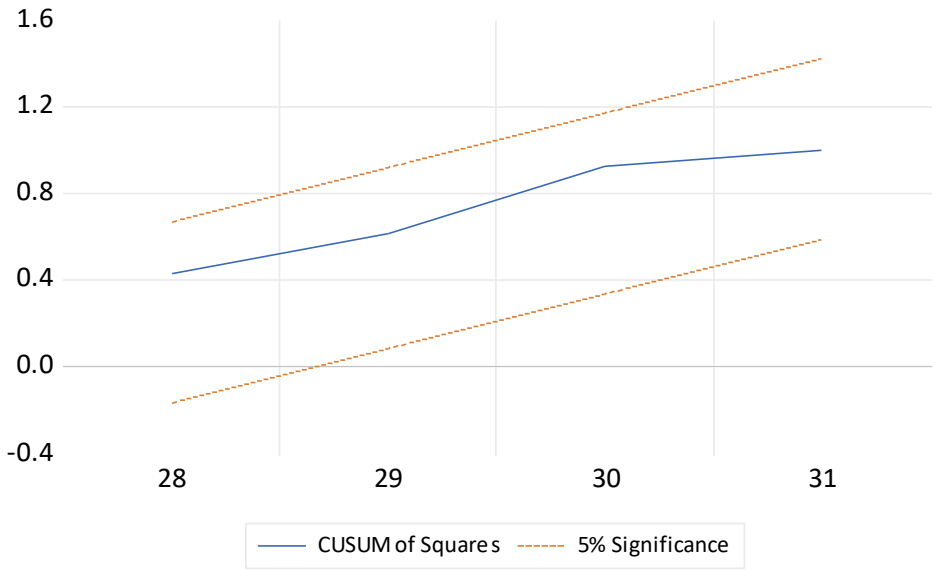
However, despite the fact that there is a null hypothesis, which shows that the parameters are consistent, the alternative hypothesis does not contain a hypothesis of this kind. A change in any of the error correction coefficients employed in the error correction model within a range of confidence that includes a margin of error of 5% is not supported by the null hypothesis, which asserts there is no change in any of the error correction coefficients (Bahmani et al. 2002). It is conceivable, at a 5% level of significance, to draw the conclusion that the idea of having no effect on a consistent coefficient cannot be sustained if any of the lines are crossed. To keep the financial development coefficient's value the same over time, the storyline in CUSUM and CUSUMQ data must stay within the key limits shown in the picture on the right.

The results of the trials suggest that the red line establishes the boundaries within which the blue line may be detected; hence, the blue line is limited to those boundaries. In order to gain an extra advantage, we have chosen to assume that the residual variances are consistent as opposed to being very variable, as the graphic indicates. This choice was made for strategic reasons. As a result, we believe it is more reasonable to take into account the possibility that the null hypothesis is correct rather than the possibility that

the alternative hypothesis is correct. On the other hand, contrary to what we may assume based on the data; the residual variance is not changing. This is a surprising finding.

4.9 CUSUM OF SQUARE

Figure 1.2



The assumption that there is no variation in the values of the parameters over time is referred to as the null hypothesis. However, there is no such thing as a hypothesis stating that the parameters are always the same in the case of the alternate hypothesis. The findings of the test demand that the blue line be kept inside the constraints of the red line, and because of this requirement, its mobility is limited. The outcomes of the tests are as follows: Because we would prefer to believe that the residual variances are stable as opposed to unstable, we have made the choice to accept the hypothesis that null hypothesis is true while simultaneously rejecting the hypothesis that the alternative hypothesis is correct. In addition to this, we are in a position to reach the conclusion that the residual variance is stable, as opposed to unstable. This is because of the previous two points. Last but not least, the cumulative sums of recursive residuals as well as the cumulative sum of squares were utilized so as to assess the long-term stability of the ARDL model's long-term coefficient in conjunction with the short-term dynamics of economic expansion drivers and financial sectors. These two methods were used to test the hypothesis that short-term dynamics had no effect on long-term coefficient stability.

Both of these approaches were utilized in order to ascertain whether or not the ARDL model's long-term coefficient is consistent throughout the course of time. This was done so that a contrast could be made between the short-term dynamics that exist between the variables and the long-term predictability of the long-term coefficient. The assumption that none of the error correction coefficients in the error correction model will change within a 95% confidence range with a margin of error of 5% underpins the null hypothesis, which indicates that this is the case. This is the fundamental assumption that the null hypothesis is based on (Bahmani et al. 2002). The null hypothesis of consistent coefficients cannot be maintained at a significant level of 5% if any of the lines are seen to have crossed. This indicates that the hypothesis is not supported by the evidence. The storyline in CUSUM as well as CUSUMQ data must remain within the crucial restrictions displayed in the graph on the right if the financial development coefficient is to remain stable over time. These limitations are represented in the graph on the right.

CHAPTER V

5.0 Summary, Conclusion and Recommendations

5.1 Summary

The study's results indicate that expansion in the financial sector has a significant impact on overall economic growth. This is a point that is well shown by the previous argument that growing the financial sector is necessary for economic growth. The ideal definition of expansion is "that financial sector development is an essential prerequisite for economic growth, as has been proved by our review of the theoretical literature and the empirical experiences of Britain, Germany, and France," which is one of the most important takeaways from Gockel's research from 1995. This is one of the most important takeaways that can be obtained from Gockel's investigation of the topic. Ghana was well aware of the significance that the amelioration of the country's financial sector played in both the process of transitioning to a new economic framework and the expansion of the economy as a whole. As a direct consequence of this, people attempted to establish monetary institutions, with the banking system receiving the greatest amount of attention and significance.

Amusa (2001) conducted research into the relationship between the rapidly expanding financial industry in South Africa as well as the general economic expansion of the country. In this particular piece of research, he made use of an endogenous growth model to investigate the connection that exists between South Africa's level of financial depth and the amount of economic enhancement that exists in the country. He was able to make use of the model that King and Levine had found to be useful in 1993. The model now incorporates financial sector development indicators, the scope of which has been expanded to cover not just the banking sector but also the security market, and it also includes both of these sectors simultaneously. The degree of financial depth in the banking industry was assessed using proxy measures such as the ratio of commercial bank assets to reserve bank assets plus commercial bank assets, the ratio of commercial bank liabilities to GDP, and the percentage of the private sector to GDP. He used the ratio of the stock market's capitalization to the GDP of the nation for the stock market and the ratio of the combined capitalization of the stock and bond markets to the GDP for the bond market. Based on his results, he came to the conclusion that the growth of South

Africa's economy was helped by the development of the country's financial industry. This conclusion was reached as a direct result of the observations that he made.

A unit root test is required to rummage if data from a time series is stationary. It is crucial to make an evaluation about whether the variables that have been observed are stationary, in which case they have and if the variables exhibit characteristics of a random walk with a unit root or if after being subjected to a shock, they revert to following the long-term trend, and then we may claim that the model is resilient. If, after a temporary or permanent shock, the variables revert to their random walk condition, then the association between the variables is seen to be spurious (Amiruddin, nor, and Ismail 2007). The Grauss-Markov theorem states that these sorts of scenarios are examples of circumstances in which the series at issue does not have a finite variance. Because of this, the OLS won't be able to come up with estimates that match the parameters. With this, our findings demonstrate that all of our variables are stationary, with the only exception of GDPP, which is stationary at a first difference with a p-value of 0.0375, which is the dependent variable. The other p values are as follows: CPS = 0.0000, K = 0.001, L = 0.0007, and X = 0.0000, respectively.

The ARDL technique's bound test, which was developed in order to identify whether or not the data collected under examination contained any examples of co-integration, was used. This allowed for the successful completion of the investigation. When the F-statistics are lower than the lower bound (critical values for I = 0), the null hypothesis cannot be refuted. This indicates that the data do not support the alternative hypothesis. This is a result of the fact that the key values are lower than the limit that is set lower than them.

On the other hand, the null hypothesis, which asserts that there is no cointegration, will not be taken into account in any further investigation if the statistics are higher than the upper limit I (1). This indicates that the test is considered inconclusive if it can be shown that the test statistics fall within the range of potential results. This may be proven by showing that the test statistics fall within the range of possible outcomes. The result of the F-statistics (10.05418) shows that we should not accept the null hypothesis and instead come to the determination that the independent variables and the variable that were the

subject of the study have a link that has persisted through time. The validity of the result is not affected by whether or not the level of significance is set at 5% or 10%.

According to the results of our investigation, the probability that the financial sector will contribute favorably to the growth of GDPP is statistically significant over the long-run, with a level of significance of 5% and a positive coefficient of 0.033. This finding is supported by the fact that this probability has a positive coefficient. According to the findings of this research, the hypothesis that positive contributions to GDPP growth may be attributed to the financial sector has statistically substantial support. The findings of our investigation provide support for this line of thinking. This would imply that, over a longer time horizon, the expansion of the financial sector contributes to rather than fully replaces the increase in the GDPP. This would show that it complements the growth of the financial sector. This is correct due to the fact that complements and replacements are two entirely distinct concepts. This suggests that a boost in GDPP expansion will ultimately lead to a rise in the CPS of 0.033% over a predetermined amount of time. This would suggest that, over a longer period of time, the increase in CPS serves more as a supplement to the growth in GDP per capita rather than as a replacement for it. There is a chance that the improvement seen in Ghana's economy is connected in some way to the discovery made here. This leads us to the conclusion that there is a significant association between the financial sector and the GDPP over the long run, with a significance level of 5%.

In view of the material that has been presented in this article, the conclusion that there is no impact should not be accepted. In contrast, the capital stock satisfies the criteria for statistical significance at the level of 5%, despite the fact that the coefficient is -3.08 and the outcome has a probability of 0.955. This indicates that the "null hypothesis" ought to be falsified, and the appropriate conclusion ought to be that growth in GDPP and a rise in the stock of capital both have positive impacts over the course of time. It has been concluded that exports are statistically insignificant at the 5% level since the probability is 0.611, which is higher than the threshold of 0.05.

The influence that CPS has had on the growth of the economy of Ghana may be observed in the table that is shown above. The results show that there is a statistically essential likelihood that GDPP will respond to CPS at a rate of 5%, but the probability of

that is just 0.0073%. The CPS has a coefficient and an impact that are both on the positive side. The coefficient of credit to private sector sensitivity is expected to increase by 0.005 percentage points as a result of Ghana's continued economic development. As a consequence of this, we are led to the realization that there is a connection between the variables in the immediate future, and consequently, we determine that the null hypothesis is invalid. It is statistically significant to give credit to the private sector at the D-CPS (-1) level at the 5% level with a probability of 0.0073. Also, the amount of work, which was represented by the letter "L," stayed at 5% with a probability of 0.01.

We concluded that there is a positive impact between variables in the short run or that there is a positive connection between variables in the short run as a consequence of rejecting the null hypothesis, which claims that there is no relationship between the variables. In light of this, we came to the conclusion that factors either have a short-term positive effect or short-term negative associations. Our variables' rate of change from the short run to the long run is 10% that of the transition's overall rate of change. The results of this study's residuals suggest that no normality, heteroskedasticity under certain conditions, or serial correlation can be found. These findings are all distinct from one another. These data show a normal distribution, which is in agreement with what was discovered in the residuals, which also show the same thing.

According to the findings of the experiment, which were interpreted using the null hypothesis, there is no such thing as a serial correlation. The results of the experiment that were based on the alternative hypothesis, on the other hand, imply that the model has serial correlations in its components. The value of the likelihood, 0.1769, is higher than the threshold, which has been determined to be 0.05%. Because of this, we've decided that the model doesn't have any serial correlation, which supports our decision to accept the null hypothesis.

To be more explicit, the findings of the test for heteroskedasticity provide evidence in favor of the null hypothesis, which asserts that the model does not display heteroskedasticity at the 5% level but becomes stationary at the 10% level; the fact that the probability value of 0.7073 exceeds the 0.05 percent threshold, which indicates that the disease is more severe, may be determined from the residual diagnostic tests. This finding suggests that the ailment is further advanced. Because of this, we can't say that

the model doesn't behave in a way that is heteroskedastic based on the 5% significance level needed to reject the idea that there is no difference.

The evidence for the null hypothesis suggests that the residuals do not follow a normal distribution at the 5% level of significance. On the other hand, the evidence presented in favor of the alternative theory suggests that the residuals do conform to a normal distribution. The Jarque-Bera probability of 0.7514 exceeds the necessary threshold of 0.05 percent. We thus infer that residuals follow a regularly distributed distribution at 5% but do not become significant until they reach 10%, rejecting the null hypothesis financial sectors. These two methods were used to test the hypothesis that short-term dynamics had no effect on long-term coefficient stability.

Both of these approaches were utilized in order to ascertain whether or not the ARDL model's long-term coefficient is consistent throughout the course of time. This was done so that a contrast could be made between the short-term dynamics that exist between the variables and the long-term predictability of the long-term coefficient. The assumption that none of the error correction coefficients in the error correction model will change within a 95% confidence range with a margin of error of 5% underpins the null hypothesis, which indicates that this is the case. This is the fundamental assumption that the null hypothesis is based on (Bahmani et al. 2002). The null hypothesis of consistent coefficients cannot be maintained at a significant level of 5% if any of the lines are seen to have crossed. This indicates that the hypothesis is not supported by the evidence. The storyline in CUSUM as well as CUSUMQ data must remain within the crucial restrictions displayed in the graph on the right if the financial development coefficient is to remain stable over time. These limitations are represented in the graph on the right.

5.2 Conclusion

As a consequence of its diverse economy, stable political climate, sustained economic development, and highly developed financial system, Ghana has garnered a reputation for having an environment that makes it easy to do business there. These factors have contributed to Ghana's reputation for having a business-friendly environment. As a direct consequence of this, Ghana has been able to pull in a sizeable quantum of foreign

direct investment and as a result, it is now widely regarded as one of the leading countries in Sub-Saharan Africa in terms of its ability to pull in this kind of investment.

The FINSSP by the government of Ghana has the overriding purpose of promoting the creation of a financial sector that is suitable to the requirements of a nation that is working toward attaining middle-income status. In light of the potential for increased international and regional competition as well as opportunities for Ghanaian players in the financial market, the objective is to create a banking system adaptable to the needs of the current century. In particular, this is important to keep in mind in light of the fact that the goal is to create a monetary system flexible enough to meet the challenges of the current era. The vision is constructed on the foundation of this notion.

Despite the efforts made by Ghana to improve its standing, the country's economy has continued to perform poorly for many decades due to domestic policy-induced distortions, shocks in international trade, and other external factors. This is the case despite the fact that the country has made efforts to improve its standing. The poor state of the economy is directly responsible for the ongoing deterioration of living conditions and the imposition of enormous additional social costs. Beginning in 1983, the PNDC administration and the IMF/World Bank worked together to implement the Economic Recovery Program. The plan's stated objective was to "bring about a period of stable economic expansion."

In one study, King and Levine (1993) examine the link between economic growth and financial enhancement by analyzing data on 80 countries between 1960 and 1989. This helps them put their theory to the test. There have been several studies conducted on the topic of the correlation between thriving economies and flourishing financial systems, like the one we just presented here. The fundamental goal of their research is to determine whether or not the two factors are related to one another in a causal fashion. They analyzed the nexus between financial development and growth, capital accumulation, and efficiency gains in the economy, both now and in the future. This was done to see if there was a connection between economic progress and crime rate reduction. To acquire a clearer picture of the quality of service provided, they devised three indicators of financial progress provided by the many different types of financial intermediaries. In the beginning, the intention was for them to be included in the computation of the more

traditional measures of financial depth. This is the same as the size of financial intermediary system as a whole, which may be determined by looking at the ratio of liquid liabilities to gross national product.

Second, they were going to be implemented in the evaluation of the existing economic climate. Demand deposits and interest-bearing commitments maintained by financial intermediaries (banks and non-banks) are examples of liquid liabilities. Demand deposits are deposits that are made on demand. Interest-bearing obligations are commitments that pay interest. Additionally, cash that is kept outside of the traditional banking system is considered to be part of this notion of liquid liabilities. Second, they distinguish between the various kinds of financial institutions that are engaged in intermediation by analyzing the significance of deposit banks in comparison to that of the central bank in terms of the distribution of domestic credit. This helps them to differentiate between the various kinds of financial institutions that are engaged in intermediation. This makes it easier for them to differentiate between the many distinct types of financial entities that are involved in intermediation. Third, they examine where the assets are distributed throughout the financial system by using two distinct measurements. These measurements are credit issued by non-financial private enterprises as a percentage of total credit and credit issued to non-financial private businesses as a percentage of GDPP. Both of these measurements are presented based on how much overall credit you have. Both of these standards are considered together.

In their study from 1996, Demirgue-Kunt and Vojislav used microdata to test the idea that sustainable development is highly influenced by financial progress. The intent of the research was to establish if there is a correlation between the two concepts. They produced an estimate of the proportion of businesses whose pace of growth was higher than the rate of expansion that could have been maintained purely by the company's own resources and found that there were a significant number of these businesses. They carried out a regression analysis including a large number of countries and found that this proportion has a positive link with both the turnover of stock markets and a measurement of the effectiveness of law enforcement. One of the conclusions drawn from their research was precisely this one. The data that was used to derive this estimation of the percentage came from the companies that were considered, thus those companies should be credited.

To put it another way, more access to resources, which is made possible by financial markets, is the direct cause of more economic growth.

Because of this, our results show that the outcomes of the study that were looked at indicate that expansion in the financial sector has a major influence on expansion across the board in the economy. This point was made very evident by the reasoning that was presented before. One of the most significant takeaways from Gockel's research from 1995 is that financial sector development is a vital condition for economic growth. It appears to be one of the cardinal conclusions that can be drawn from Gockel's research. As a consequence of our research into the theoretical literature and our evaluation of the empirical experiences of the United Kingdom, Germany and France, we have determined that the growth of the financial industry is a necessity for economic expansion. The findings of Gockel's investigation have offered a number of crucial discoveries, this being one of the most noteworthy. Ghana was well aware of the significance of financial amelioration in both the process of transitioning to a new economic architecture and overall economic progress. As a direct result of this, people began to strive toward the development of institutions. The financial system triumphed in the fight to attract the most attention and be prioritized.

Amusa (2001) conducted a study on the impact that South Africa's rapidly developing financial industry had on the country's overall economic growth. During this investigation, he employed an endogenous growth model to investigate the link that exists between South Africa's degree of financial depth and the amount of economic expansion that occurs in the country. He applied the paradigm that King and Levine had employed with great success earlier in 1993. The model now includes indicators of financial sector development, and their coverage has been enlarged to encompass both the securities market and the banking industry. Proxy metrics such as the ratio of commercial bank assets to Reserve Bank assets including commercial bank assets, the ratio of commercial liabilities to GDPP, and the ratio of the private sector to GDPP were used to determine the amount of financial depth in the banking sector. He used the ratio of the stock market's capitalization to the country's gross domestic product for the stock market and the ratio of the combined capitalization of the stock and bond markets to the GDPP for the bond market. These ratios are both given as a proportion of GDPP. As a consequence of his

research, he concluded that there is a statistically significant positive impact on the expansion of the South African economy induced by financial development. This conclusion was reached as a consequence of his results.

He went on to point out that the influence on economic growth differs depending on whatever areas of financial development are being looked at, which is something else he mentioned. This insight is included in the following statement that he made: This is in line with the findings that we have obtained from our research. This demonstrates that not only has the contribution of CPS to the expansion of Ghana's economy been beneficial, but that it has also been statistically significant and that it has been a positive contribution, which is something else he mentioned. This insight is included in the following statement that he made: The influence that CPS has had on the growth of the economy of Ghana may be observed in the table that is shown above. The results show that there is a statistically essential likelihood that GDPP will respond to CPS at a rate of 5%, but the probability of that is just 0.0073%. The CPS has a coefficient and an impact that are both on the positive side. The coefficient of credit to private sector sensitivity is expected to increase by 0.005 percentage points as a result of Ghana's continued economic development. As a consequence of this, we are led to the realization that there is a connection between the variables in the immediate future, and as a consequence of this, we determine that the null hypothesis is invalid. It is statistically significant to give credit to the private sector at the D-CPS (-1) level at the 5% level with a probability of 0.0073. Also, the amount of work, which was represented by the letter "L," stayed at 5% with a probability of 0.01.

We concluded that there is a positive impact between variables in the short run or that there is a positive connection between variables in the short run as a consequence of rejecting the null hypothesis, which claims that there is no relationship between the variables. In light of this, we came to the conclusion that factors either have a short-term positive effect or short-term negative associations. Our variables' rate of change from the short run to the long run is 10% that of the transition's overall rate of change.

5.3 Recommendations

When we refer to the financial sector as needing reform, what we really mean is that it needs better operations, structures, and human resources in order to supply services

to the private sector effectively. Public policymakers must develop the measures that will advance the financial as well as capital markets, remove the barriers to their expansion, and improve the general health as well as degree of competitiveness of the banking system. Along with restricting and recapitalizing financial institutions, they must also take steps to increase the accountability and independence of such institutions. The Ghanaian government must ensure that adequate regulation and supervision of all financial institutions are carried out in order to speed the development of the country's financial sector and improve the nation's financial structure, both of which encourage quicker economic growth. This means that more non-banks and private banks should be encouraged to start their own financial markets. The growth of the microfinance industry is particularly crucial since it is necessary to provide credit to micro entrepreneurs, who are frequently excluded from participating in the conventional credit markets. These measures will make it simpler for the private sector, which drives the economy's expansion and development, to expand and invest.

We advise care when choosing which indicators of financial development to use as policy tools throughout the process of developing and implementing policies connected to growth. According to the study, policies that support the private sector's access to affordable financing, particularly for small and medium-sized firms, would encourage crucial innovation as well as growth in plant capacity in manufacturing, industry, and agriculture. We would experience the levels of employment, household incomes, and overall economic development that we desire if this were to take place. The findings of our study suggest that expansionary as well as monetary policies, which result in an excessive money supply, may be detrimental to the expansion of the economy. We came to this conclusion as a direct result of the information we gathered. In light of this, any type of monetary expansion, such as that must be complemented with emoluments from the public sector with an increase in productivity in order to have the necessary impacts on the economy's growth. The government should also encourage activities that cut loan rates that are excessively high in order to manage inflation and focus it on goals that will increase growth in an effort to alleviate macroeconomic uncertainty.

It is advised that emerging countries like Ghana concentrate more attention on the development of their financial sectors, with a focus on the development of their capital

markets in particular, to ensure continued economic progress. A minimal inflation rate that is deemed acceptable for that country must be established in order for the economy of a developing country to grow. Again, greater effort must be put into place to improve the development of these nations' infrastructure if the economies of these nations are to grow.

There is a need for consistent, transparent, and fair policy toward all of the players in the sector, including a need to ameliorate viable and responsive financial services for the poor in Ghana. The government must pay off all creditors and contractors so that they can pay banks and borrow new loans, as well as resuscitate some of them to good financial health. The reduction in the costs of borrowing would drive the desired growth of credit, which would then stir investment activity inside Ghana. It is also important to continue putting in place policies that provide tax breaks and incentives. A strong and long-lasting human-centered development strategy that can change the structure of the economy, the need for fiscal adjustment, the creation of more flexible ways for the government to pay for things, as well as the need for political stability in the country are all things that are required.

Additionally, serious focus should be placed on the safety of both people’s lives and their property. The supply of recurrent expenditures that are needed to ensure the quality of public sector framework should be made possible to stimulate an increase in government consumption spending, which in turn causes a more rapid accumulation of domestic capital. The government should continue to step up its efforts to earn the public’s trust in this industry by passing and enforcing enough rules and controls. The reforms that have already been made in the financial sector should also be kept in place so that more money can be put toward investments and other productive activities.

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Appendix

UNIT ROOT TEST

GDP per capita

Null Hypothesis: GHANA_GHA_GDP_PER_CAPITA__CONSTANT_LCU__NY_GDP_PCAP_KN...
Exogenous: None
Lag Length: 1 (Automatic - based on AIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		1.879276	0.9831
Test critical values:	1% level	-2.647120	
	5% level	-1.952910	
	10% level	-1.610011	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(GHANA_GHA_GDP_PER_CAPITA__CONSTANT_LCU__NY_GDP_PCAP_...
Exogenous: None
Lag Length: 0 (Automatic - based on AIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.085100	0.0375
Test critical values:	1% level	-2.647120	
	5% level	-1.952910	
	10% level	-1.610011	

*MacKinnon (1996) one-sided p-values.

Credit to private sector

Null Hypothesis: CPS has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.103569	0.9605
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(CPS) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.716380	0.0000
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

Capital stock

Null Hypothesis: K has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.305213	0.6140
Test critical values:	1% level	-3.670170	
	5% level	-2.963972	
	10% level	-2.621007	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(K) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.386372	0.0001
Test critical values:	1% level	-3.689194	
	5% level	-2.971853	
	10% level	-2.625121	

*MacKinnon (1996) one-sided p-values.

Labor

Null Hypothesis: L has a unit root
Exogenous: Constant
Lag Length: 5 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.495880	0.5191
Test critical values:	1% level	-3.724070	
	5% level	-2.986225	
	10% level	-2.632604	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(L) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on t-statistic, lagpval=0.1, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.409670	0.0007
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

*MacKinnon (1996) one-sided p-values.

Export

Null Hypothesis: X has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic - based on t-statistic, lagpval=0.1, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.993625	0.2873
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(X) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on t-statistic, lagpval=0.1, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.892501	0.0000
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

ARDL SHORT RUN TEST

ARDL Error Correction Regression
Dependent Variable: D(LGDPP)
Selected Model: ARDL(4, 0, 2, 1, 1)
Case 2: Restricted Constant and No Trend
Date: 01/01/23 Time: 19:23
Sample: 1 31
Included observations: 27

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDPP(-1))	-0.184389	0.165731	-1.112583	0.2846
D(LGDPP(-2))	0.019409	0.149547	0.129784	0.8986
D(LGDPP(-3))	-0.348590	0.138120	-2.523819	0.0243
D(L)	7.09E-07	2.61E-07	2.719455	0.0166
D(L(-1))	-5.03E-07	2.47E-07	-2.036291	0.0611
D(K)	-9.03E-11	2.96E-11	-3.050402	0.0086
D(CPS)	0.005307	0.001695	3.132027	0.0073
CointEq(-1)*	-0.109185	0.015888	-6.872124	0.0000

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDPP(-1)	0.744123	0.105120	7.078783	0.0000
CPS	0.002960	0.002485	1.191364	0.2475
CPS(-1)	0.005006	0.002025	2.472086	0.0225
K	-1.31E-10	4.43E-11	-2.969753	0.0076
K(-1)	-7.56E-11	4.65E-11	-1.624363	0.1200
K(-2)	-8.32E-11	4.67E-11	-1.781401	0.0900
L	-2.97E-08	9.30E-09	-3.194055	0.0046
X	-0.001969	0.000744	-2.645744	0.0155
C	2.395239	0.961646	2.490770	0.0217

ARDL LONG RUN and ARDL BOUND

ARDL Long Run Form and Bounds Test
Dependent Variable: D(LGDPP)
Selected Model: ARDL(4, 4, 3, 1, 4)
Case 2: Restricted Constant and No Trend
Date: 01/01/23 Time: 19:21
Sample: 1 31
Included observations: 27

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.76226	3.987212	3.953204	0.0075
LGDPP(-1)*	-1.719569	0.439907	-3.908943	0.0079
X(-1)	0.000655	0.001223	0.535378	0.6116
L(-1)	-7.01E-08	1.34E-08	-5.246483	0.0019
K(-1)	-8.15E-11	7.79E-11	-1.046203	0.3358
CPS(-1)	-0.046765	0.016816	-2.781003	0.0320
D(LGDPP(-1))	1.004681	0.402048	2.498909	0.0466
D(LGDPP(-2))	0.986447	0.370738	2.660770	0.0375
D(LGDPP(-3))	0.760672	0.325040	2.340240	0.0578
D(X)	-0.003232	0.000878	-3.679793	0.0103
D(X(-1))	-0.004448	0.001368	-3.252025	0.0174
D(X(-2))	-0.004872	0.001130	-4.311951	0.0050
D(X(-3))	-0.002989	0.000863	-3.464045	0.0134
D(L)	9.12E-07	3.43E-07	2.656980	0.0377
D(L(-1))	3.87E-07	4.30E-07	0.900071	0.4028
D(L(-2))	1.40E-06	4.80E-07	2.906526	0.0271
D(K)	-3.08E-12	5.24E-11	-0.058809	0.9550
D(CPS)	-0.004742	0.003540	-1.339560	0.2289
D(CPS(-1))	0.033788	0.009383	3.600780	0.0114
D(CPS(-2))	0.027908	0.007179	3.887667	0.0081
D(CPS(-3))	0.014878	0.003977	3.740520	0.0096

* p-value incompatible with t-Bounds distribution.

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X	0.000381	0.000681	0.559324	0.5962
L	-4.07E-08	5.82E-09	-7.001618	0.0004
K	-4.74E-11	5.23E-11	-0.905728	0.4000
CPS	-0.027196	0.003513	-7.742450	0.0002
C	9.166401	0.042385	216.2642	0.0000

EC = LGDPP - (0.0004*X -0.0000*L -0.0000*K -0.0272*CPS + 9.1664)

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	10.05418	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	27		Finite Sample: n=35	
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
			Finite Sample: n=30	
		10%	2.525	3.56
		5%	3.058	4.223
		1%	4.28	5.84

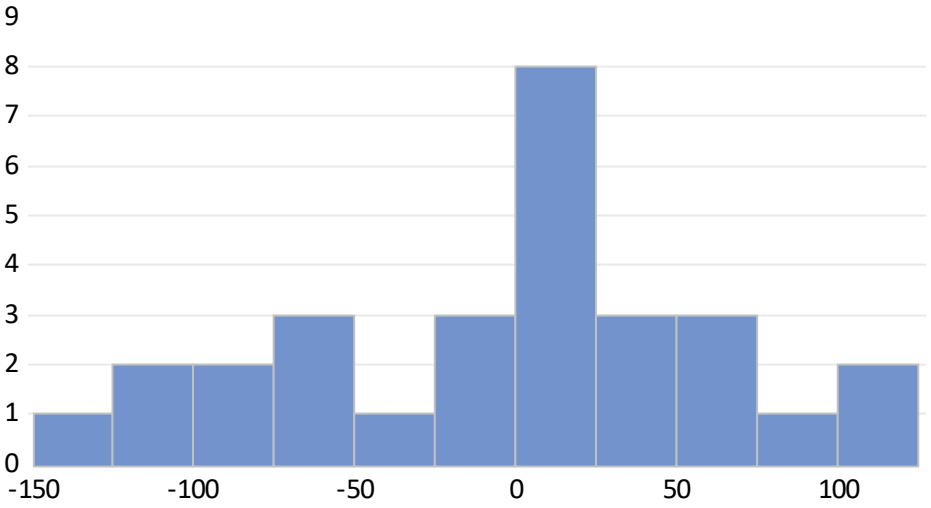
Residual Diagnostic test

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	1.221127	Prob. F(2,18)	0.3182
Obs*R-squared	3.464656	Prob. Chi-Square(2)	0.1769

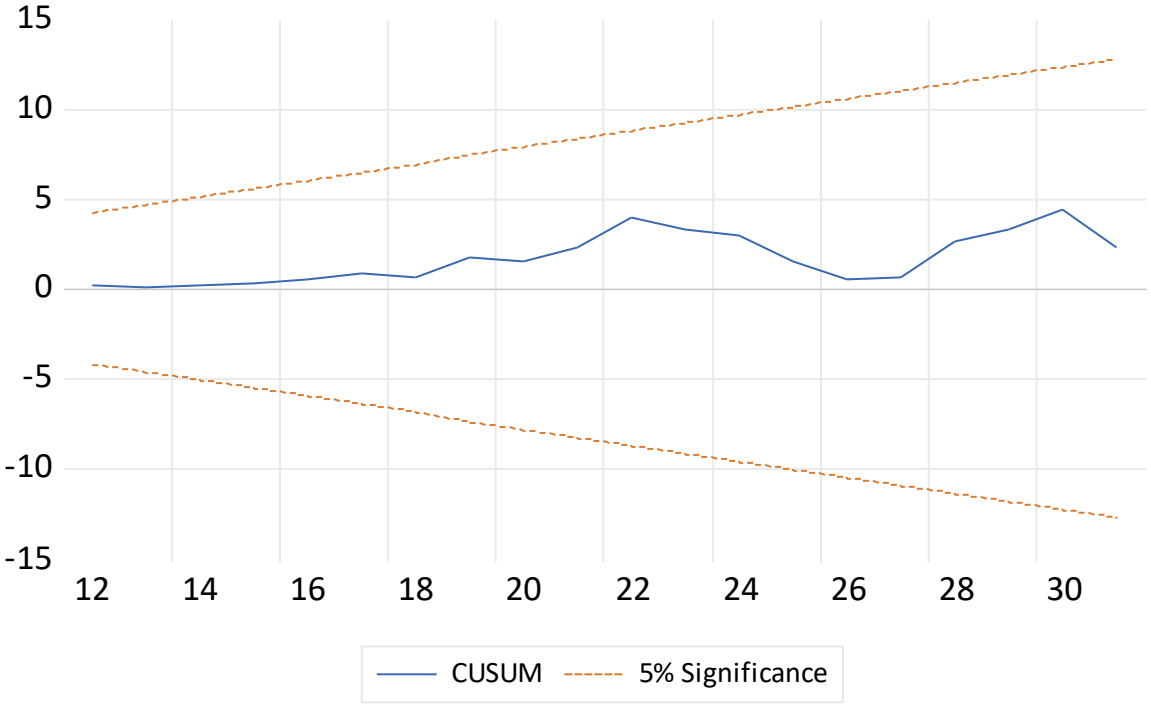
Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

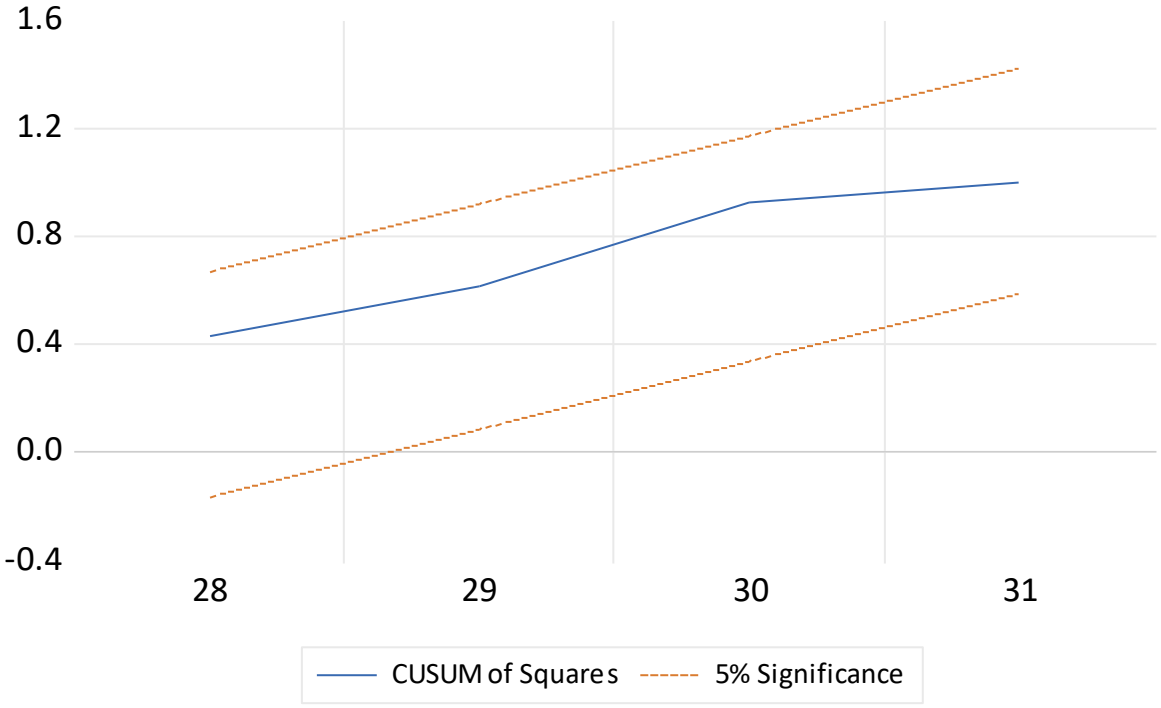
F-statistic	2.496101	Prob. F(8,20)	0.0464
Obs*R-squared	14.48869	Prob. Chi-Square(8)	0.0699
Scaled explained SS	5.461355	Prob. Chi-Square(8)	0.7073



Series: Residuals	
Sample 3 31	
Observations 29	
Mean	1.74e-13
Median	10.58372
Maximum	123.3198
Minimum	-136.2681
Std. Dev.	64.50627
Skewness	-0.274233
Kurtosis	2.585030
Jarque-Bera	0.571560
Probability	0.751428

STABILITY TEST





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