

**AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND  
ENTREPRENEURIAL DEVELOPMENT**

**DETERMINANTS OF MORTGAGE LOAN DEMAND IN GHANA.**

**STEPHEN AKWASI DIMZOEYA**

**MASTERS OF BUSINESS ADMINISTRATION (ACCOUNTING)**

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ENTREPRENEURIAL DEVELOPMENT**

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**STEPHEN AKWASI DIMZOEYA**

**(7211320017)**

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**OCTOBER, 2023**

## **DECLARATION**

### **STUDENT'S DECLARATION**

I, **STEPHEN AKWASI DIMZOEYA**, declare that this dissertation, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE .....

DATE:.....

### **SUPERVISOR'S DECLARATION**

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of Thesis as laid down by the Akenten Appiah-Menka University of Skills Training And Entrepreneurial Development, Kumasi.

NAME OF SUPERVISOR: **DR. JOSEPH ANTWI BAAFI**

SIGNATURE .....

DATE:.....

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## **DEDICATION**

This research project is dedicated to my Family, especially, my sister, Gifty Dimzoeya, My Mum, My Daughter Lois Bamatiba Dimzoeya and all my loved ones for their endless support, prayer, love and encouragement during my study.

God Richly Bless You All.

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## ABSTRACT

Access to mortgage finance in Ghana is problematic for borrowers and homeowners. Examining the factors that influence Ghana's demand for mortgages is the study's main goal. This study's approach was based on a descriptive design. This study used secondary sources to obtain its data. The information was gathered from the official Bank of Ghana website. Secondary data from September 2019 through April 2023 served as the study's primary source of data. The financial accounts were presented consistently during this time period, which is why it was chosen. The information is composed of monthly statistics for the several study variables, such as macroeconomic and commodity prices. To ascertain whether or not the independent variable in a regression model has a strong association, statisticians use Multicollinearity. STATA was used to analyze the collected data. In this study, regression analysis is being performed to ascertain the relationship between the variables under investigation. The study used the unit root test with Augmented Dickey-Fuller after taking the first difference to ascertain whether or not the series is now stationary. The study revealed that gold price, lending rate and Monetary Policy Rate were found to have insignificant influence on the dependent which is Mortgage Loans. But four of the other variables which include crude oil price, Cocoa Price, Inflation and Exchange Rate were found to have insignificant influence on the dependent variable which is Mortgage Loans. Therefore, the study concludes that the determinants of mortgage demand in Ghana include crude oil price, cocoa price, inflation and exchange rate but exclude, gold price, lending rate and monetary policy rate. This means for an individual to demand mortgage loans from banks it depends on the crude oil price, cocoa price, inflation and exchange rate.

# CHAPTER ONE

## INTRODUCTION

### 1.0 Background of the Study

Ghana's urban rate of 3.31 percent is among the highest in the world (World Bank, 2019). Urbanization in Sub-Saharan Africa is increasing, and this trend is anticipated to accelerate exponentially in the coming years. According to Tuwesigye et al. (2021), as of 2021, urban areas and cities accommodated 41.83 percent of the total population of Sub-Saharan Africa. Prolonged urbanization exerts significant strain on rental housing, social housing, and the construction of new affordable homes due to a discrepancy between supply and demand (Asabere et al., 2016; Kockelkorn et al., 2022). Consequently, these sectors incur greater expenses and experience reduced accessibility. An ongoing concern in both developed and developing nations is the provision of affordable accommodation, as stated by Afrane et al. (2016). (Adabre et al., 2022) Severe housing issues in numerous developing nations result in slums, congestion, and public health complications.

The persistent shortage gap has emerged as a significant socio-economic challenge for developing nations, with Ghana in particular, despite the implementation of numerous interventions aimed at mitigating the supply-and-demand discrepancy that leads to an ongoing shortage. (Owusu-Manu et al., 2018) Mortgage loan transactions facilitate the transfer of funds from borrowers with surplus funds to those with limited funds, thereby enabling borrowers to efficiently procure housing funds. Lending to prospective homebuyers in order for them to obtain a loan to secure the purchase constitutes mortgage financing. Aeye, Teye, and Asiedu (2015) and Ouazad and Kahn (2019) support this. The lack of a comprehensive housing strategy in Ghana has hindered the

country's mortgage sector from developing significantly, despite the government's ongoing efforts to establish temporary housing programs (Bonsu, 2007).

Ghana exhibits a notably low inclination towards mortgage financing, despite the relative stability of macroeconomic conditions and the proliferation of institutions providing mortgage services. The current state of affairs is perplexing due to the fact that eligible individuals should seize the opportunity to acquire their own houses if financial constraints are the primary impediment to house purchases and credit-granting institutions became available. As a result of high interest rates, unfavorable loan repayment terms, and low income levels, mortgage loan demand is significantly diminished (Aha, Ayitey, & Martey, 2016). A mortgage market that is innovative, adaptable, and cost-effective could assist in resolving the housing deficit issue in Ghana, where financing is the most documented barrier to home ownership.

A multitude of obstacles, including the inability of low- and middle-income groups to obtain long-term financing for these facilities, plague Ghana's housing market, which is currently embryonic and underdeveloped. Since the majority of homebuyers, those with low and moderate incomes, have withdrawn from the market, alternative housing acquisition strategies have become necessary. The mortgage market, which enables borrowers to purchase their desired homes with installment payments, is the direct result of the search for the most dependable, practical, and efficient housing financing option. More consumers will be able to afford this scarce yet vital commodity if a properly operating mortgage market primarily facilitates increased housing financing at competitive costs and prices.

Substantiating housing prices and fostering financial inclusion, stability, and development in developing economies are all objectives of mortgage financing, according to Kivindu (2016). To expedite business investments and finance households, mortgage financing is commonly employed. In addition to increasing capital transfers to the housing sector, mortgage financing serves multiple purposes in emerging economies by facilitating the provision of affordable housing and by more equitably distributing the industry's inherent risks. Through the provision of mortgages, mortgage finance empowers the average citizen to become a homeowner. This indicates that the provision of resources necessary for the acquisition of real estate or the financing of construction capital is contingent on the establishment of collateral. Mortgage funds, savings and loan associations, banks, insurance firms, pension funds, and trust funds are among the institutions in Ghana that provide financing for real estate ventures.

Extensive research and documentation have been devoted to the conditions and obstacles that influence mortgage demand. A multitude of scholarly investigations have established that the demand for mortgage loans is substantially influenced by factors including the income level of householders, alternative financing options, legal fees, and exorbitant stamp duty premiums. Moreover, demand for home loans is influenced in various ways and yields distinct consequences by additional economic indicators, including exchange rates, interest rates, economic growth, and inflation. Further references include Teye, Teye, and Asiedu (2015), Aha, Ayitey, and Martey (2016), Frimpong (2021), and Krkoskova and Szkorupova (2021). In light of this, the study employs Title Theory as a framework to investigate the factors that influence and the obstacles encountered in the mortgage sector of Ghana.

## **1.1 Problem Statement**

The mortgage market functions as a mechanism for wealth creation and business development, in addition to its primary functions of job creation and housing infrastructure provision, which contribute to the improvement of cities and overall economic progress (Boabeng 2016). Nevertheless, debtors in the nation are no longer able to easily obtain mortgage financing. Access to mortgage finance in Ghana is problematic for borrowers and homeowners, according to Owusu-Manu et al. (2018). Poorly underdeveloped is the mortgage industry in Ghana. Elevated capital expenditures, an unreliable macroeconomic climate, and unfavorable borrower attributes—thereby engendering a substantial default and collateral risk—have all contributed to the stagnant growth and engagement of the mortgage sector.

The majority of lower and middle-income Ghanaians have been unable to obtain mortgage financing for the purchase or construction of a home due to the unfavorable lending environment (Owusu-Ansah, Soyeh, & Asabere, 2019). Finance is a significant obstacle in the provision of accommodation in Ghana, according to Osei Gyadu-Asiedu, Anewuoh, and Appiadu-Boakye (2023). One significant obstacle to property ownership for individuals is the lack of access to housing finance, which is prevalent among those with lower, moderate, and higher incomes (Afrane, 2016). Slight financial institutions that continue to provide mortgage financing have taken precautions to minimize the associated risks. As a result, these financial institutions are now able to rigorously examine the clients they consider for the mortgage offer selection process. A considerable number of people are unable to leverage their personal incomes and savings in order to purchase a home or engage in the real estate industry. An escalating scarcity of accommodation in the nation has ensued as a consequence (Boabang, 2015).

The level of Non-Performing Assets (NPA) is certainly influenced by loan pricing, as demonstrated in research (Douglas, Lilian, & Muniar, 2015; Umuro 2017; Umuro citation). In order to increase revenue from interest income, they suggested that financial institutions adopt a lenient approach to the loan selection process and charge competitive interest rates that entice additional creditors.

As the economy experiences a decline in interest rates and exchange rates, Evans and Adjei (2014) found that business expansion occurs. As well as granting individuals access to mortgages, a decline in interest rates grants businesses the ability to acquire capital at a reduced cost for the purpose of expansion and other forms of development. In Ghana, however, it is widely believed that commercial banks are increasing interest rates despite the central bank and government's efforts to reduce lending rates through the reduction of prime rates. According to Quashigah and Kwashigah (2017), this phenomenon serves as a deterrent for small businesses and borrowers in general seeking to expand the housing or real estate sector within the nation. Furthermore, it was noted by Matete, Ndede, and Jagonga (2014) that investment is likely to decline when the user cost of capital is uncertain due to the rapid fluctuations in interest rates, exchange rates, and inflation. The valuation of specific assets, including stocks and real estate, has been impacted by erratic and unanticipated fluctuations in these macroeconomic factors.

## **1.2 Objectives of the Study**

The general objective of the study is to examine the determinants of mortgage demand in Ghana. The specific objectives of the study were:

1. To examine the trend of mortgage loan demand in Ghana.
2. To examine the factors influencing the demand for mortgage loan.

### **1.3 Research Questions**

The study seeks to address the following research questions:

1. What is the trend of mortgage loan demand in Ghana?
2. What are the factors affecting the demand for mortgage finance in Ghana?

### **1.4 Significance of the Study**

This study seeks to examine the determinants of demand for mortgage finance. This study's findings will contribute to the development and growth of the finance and real estate industries. The study's recommendations will also assist industry players in emphasizing the relevance of micro and macroeconomic issues and their effects on mortgage finance demand. The findings will complement earlier studies in the academic community. For students doing research on the same or similar topics, it will serve as a reference as well. To guarantee monetary and fiscal restraint in the banking sector, government agencies and regulatory bodies—like Ghana's Central Bank—can utilize the study's conclusions. They will be able to create rules and take other actions that will support the effective growth of the mortgage industry with this assistance.

### **1.5 Scope and Limitations of the Study**

This study determines the determinants of mortgage demand in Ghana. The study focuses on the Ghana as the demographic area. The study would also focus on data from September, 2019 to April, 2023.

Contextually, the study would be limited to only the macroeconomic variable and commodity prices in Ghana. Hence, conclusions and recommendations of this would only be limited to Ghana and cannot be generalize to other countries in Africa and the world at large. Also, this study only uses information from September, 2019 to April,

2023. That means, conclusions and recommendations in this study would be based on only the information from September, 2019 to April, 2023.

### **1.6 Organization of the Study**

The context of the study, the problem statement, the research objectives, and the research question were all included in Chapter one. The chapter also discusses the study's importance, its limitations, its scope, and its structure. The study's second chapter provides a summary of pertinent research on the topic. It provides a synopsis of the study's previously published data from several sources. The study's research technique is covered in Chapter three. It comprises the demographic, sample size, data source, data collection methods, and data analysis in addition to the research design. A summary of the study's conclusions and outcomes is given in Chapter four. The summary, conclusions, and suggestions for potential improvement are included in Chapter Five, which is the last chapter.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter looks at the general review of literature on mortgage loans, homeowner characteristics and macroeconomic factors affecting mortgage loan demand. The definition of concepts and a critical analysis of them open the chapter. Following the conceptual review, the researcher gives the ideas that guide the investigation, an empirical literature evaluation, and an assessment of Ghana's mortgage market. The study's conceptual framework is presented as the chapter comes to a close.

#### **2.1 Conceptual Overview**

##### **2.1.1 Mortgage Loan**

A secured loan that you can obtain by offering your asset as collateral to the lender is a mortgage loan, commonly known as a mortgage (Olanrewaju & Woon, 2017; Iosifidi, Panopoulou & Tsoumas, 2021). An agreement between a borrower and a mortgage lender to purchase or refinance a home without having all the money up front is known as a mortgage loan, according to Brueggeman and Fisher (2011). This contract grants lenders the authority to legally seize a property in the event that the borrower defaults on the mortgage by failing to pay the principle and interest. Terms and conditions or a promissory note—a letter of agreement—are typically included in mortgage financing. "A document which acts as an evidence of a debt that exists between a lender and a borrower" is how Brueggeman and Fisher (2011) defined a promissory note. The rights and obligations of the parties concerned, as well as the terms and conditions under which a particular loan must be repaid, are primarily contained in a promissory note.

Any payment required under the conditions of the note is personally owed by the borrower. There are numerous items in a promissory note, some of them are as follows:

**The amount borrowed:** This amount is normally advanced in total when the loan agreement is accomplished. The borrowed amount is usually the face amount of the note. The amount could be advanced as the construction progresses but not exceed the maximum amount in cases involving construction loans.

**The rate of interest:** Interest rate charged could be an adjustable rate or a fixed rate. If is former, exactly how the rate may be changed to will be stated.

**The amount:** (in a certain currency), the borrower's required number of payments, and the deadline: (i.e. GHS 400 per month due on the 28th of each month following the closing date for 200 consecutive months).

**The Maturity Date:** The date at which all remaining amount due under the term of the loan is paid.

**Reference:** Reference to the property serving as security for the loan as proofed by a mortgage document.

**Application of payment:** This is mostly made earlier to cover any late chargers or penalties incurred, then to interest and to principal reduction.

**Default:** When a borrower disregards certain obligations outlined in the note, this take place. Usually, this results from failure to pay the outstanding balance (Fox 2015).

As on Engström's (2020) analysis, there are two primary participants in the mortgage market: the mortgagee, who provides the funds in a mortgage transaction, and the mortgager, who is the borrower on the demand side who utilizes assets as collateral for debt. Those who develop and fund their own loans, which are then offered for sale on the external market, are typically the secondary participants in the mortgage market. These include mortgage bankers. Mortgage brokers build connections with other

lenders so that they can place the loans they originate with them. Businesses that provide insurance to protect lenders from some of the potential losses incurred by loan default. And regulatory organizations, which function as a body to establish legal guidelines for the application of contracts between actors in the mortgage market and guarantee best practices in relation to procedures like foreclosures, etc.) Campbell (2012). Since they transfer money from those with excess funds to people with deficit funds, mortgage arrangements are a useful tool for borrowers to generate housing funds (Calomiris et al., 1994).

### **2.1.2 Types of Mortgage Loans in Ghana**

According to a study done by Ampofo (2020), mortgage loans are of five kinds which are offered by financial and non-financial institution in Ghana. These mortgage types are explained in the following subsections

#### **2.1.2.1 First-time Buyer or Home Purchase Mortgage**

Mortgage of this kind is made for both existing homeowner and first-time buyers. It is design to help potential homeowners to acquire their own house or rental purpose. Borrowers who apply for this type of mortgage are expected to make payment of a certain amount proportional to the total cost then the institution issuing the mortgage loan finance the rest. Borrowers mostly pay about 15% of the actual amount and the institution finance the rest (85%).

#### **2.1.2.2 Home Equity Mortgage**

Home equity mortgage allow homeowners to release part of the equity on their property to either improve their existing project, pay overseas school fees or expand their businesses. The amount given under this type of mortgage finance mostly differ from

one bank to the other. The lending rate charge is typically 15 years with interest rate which varies (Ukpai et al 2013).

#### **2.1.2.3 Home Completion Mortgage**

This kind of mortgage enables borrowers who already have started building their houses with their own savings to access mortgage loan in order to complete it. The main objective of financial and non-financial institution for given out this kind of mortgage finance is to enable potential homeowners complete the housing project (Anim-Odame, 2014).

#### **2.1.2.4 Home Improvement Mortgage**

Brueggeman and Fisher (2011) noted that, home Improvement mortgage aims at exiting property holders and also companies with belongings that require innovation. The main of this kind of mortgage is to enable individuals or companies to embark on renovation or extension of their remaining homes and facilities. The money contributed for home improvement goes toward giving the current property a makeover, which is how home improvement mortgages differ from home equity mortgages.

#### **2.1.2.5 Construction Finance/Home Construction**

Construction finance/home construction is given to real estate developers as well as individual borrowers. This type of mortgage finance is directed towards financing the construction of real estate, individual homes and also to customers of real estate developers. Nonetheless, developers of real estate are the main target for this kind of mortgage (Boabeng, 2015).

### **2.1.2 Benefits of Mortgage Finance in Ghana**

There is the need for mortgage financing to ensure growth in the housing and real estate industry. Through mortgage finance, homeowners are able to acquire real estate properties at affordable rates. Mortgage financing enable the ordinary person to own a home by accessing mortgage loan to finance the construction of a house (Bank of Ghana, 2021). Applicants who acquire mortgage financing are allowed to maintain ownership of their homes and utilize them as collateral to obtain funds simultaneously, according to Decardi-Nelson et al. (2012). Mortgage interest is paid in a tax-free manner. Because the settlement schedules are predetermined, mortgage finance enables the person who accesses it to have a future payment plan.

Essential advantages of a thriving mortgage finance system include better living conditions (a higher standard of living), better infrastructure, a greater inclination to save, and capital provision for other investment vehicles, among other things (Coletti et al., 2016). In emerging economies, personal dwellings account for 75–90% of household wealth, which is three to six times yearly income. As a result, mortgage finance helps households buy an asset that will be their largest single investment, which promotes social stability (IFC, 2008).

Seiders (2019) contend that the mortgage market has a major positive impact on social cohesion, economic growth, urban development, property ownership, job creation, and wealth distribution. Failing to enhance housing and market conditions can hinder economic growth, fuel social isolation and poverty, produce unfavorable externalities in development, and cause the economy to become unstable (Lea, 2010).

### **2.1.3 Challenges of Accessing Mortgage Finance in Ghana**

A number of limitations limiting the growth of mortgage in sub-Saharan Africa were found in the analysis of post-1999 housing finance literature conducted by (UN-Habitat; World Bank and IMF; Ansah 2002) reviewed by Tomlinson (2007). These difficulties include government incompetence in managing state-owned financial institutions and macroeconomic instability among the continent's nations. The research additionally demonstrated that an ineffective collateralization of housing assets has been caused by an antagonistic institutional, legal, and regulatory framework.

The difficulty of a certain segment of Ghana's population to obtain mortgage loans is one of their greatest obstacles, per the research conducted by Afrane et al. (2013). Few financial and non-financial organizations provide mortgage financing, as demonstrated by (Osei, 2013).

Additionally, as successful mortgage financing requires around 25 to 30 years before complete payment is made, the institutions that provide the financing do not have the ability to offer average or long-term financing. Instead, they only provide low-risk, low-cost business term funding. These difficulties have severely damaged the housing market (Afrani et al 2013). One of the main difficulties faced by mortgagers is the requirement to post collateral as security (Decardi-Nelson et al., 2012). It limits the ability of regular people (low-income workers) to obtain a mortgage and permits only those who can afford to do so to become homeowners. The cost of legal fees and other administrative expenses, the high cost of real estate, and the associated risk make it difficult for the typical Ghanaian to engage in the mortgage market.

### **2.1.3 The Housing Policies in Ghana: Role Played by Various Governments**

Ghana has struggled with substandard housing and poor quality despite the implementation of various housing policies since the nation's independence in 1957 (Boamah, 2014). The subsequent subsections discuss the various governments' contributions to the housing sector's development in Ghana over the years, as well as the factors that have contributed to the sectors' triumphs and failures in their efforts to do so.

Under the leadership of Kwame Nkrumah, Ghana enacted its first housing policy following independence. The joint government of Nkrumah and the British Administration prior to independence provided the majority of the policy documents enacted by Ghana. There were two primary objectives of the policy: (1) to facilitate homeownership among individuals, and (2) to promote housing provision by the government through direct means.

As an alternative to requiring individuals to invest in the development levy, the initial policy required the government to furnish serviced lands with utilities such as electricity, water mains, and roadways. These lands were leased to individuals at reasonable rates. With the aim of promoting do-it-yourself construction, this policy also implemented the Roof Loan Scheme, a concept that was endorsed by the United Nations.

The government constructed housing directly as part of the second policy. Individuals were to receive various varieties of completed houses from the State Housing Corporation (SHC) in accordance with their income levels. For the construction of 5,000 laborer's quarters, £1,500 for lower income housing, and £2,000 for middle

income housing, the government allocated £2 million to the SHC (Konadu, 2001). Each of these housing units was to cost £2,000, £500, or £200.

Overall, throughout his administration, the Nkrumah administration acknowledged the significance of housing provision and the development of diverse housing strategies. The goal of the Nkrumah administration was to finance housing with industrial sector resources. The generated revenue from these sectors was never allocated to essential sectors, such as housing development, but rather to foreign corporations, elites, politicians, business magnates, and influential individuals (Rapley, 2002). As a result, these expectations were never fulfilled.

1966 witnessed the coup d'état that deposed Kwame Nkrumah on behalf of the National Liberation Council (NLC), which was comprised of four police officers and four army officers. The National Liberation Council successfully executed a Two-Year Development Plan. This program's primary objective was to ensure that housing was produced in a reasonable and balanced manner by the productive sectors of the economy. Moreover, its objective was to eliminate and impede the growth of colonies in urban regions. Annually, 2,000 housing units were to be constructed by the NLC via the TDC and the SHC. One thousand units were produced in total. A mere 2.7% of these had a single apartment. Cape Coast accounted for 11.3%, Sekondi-Takoradi 7.5%, Accra 9%, and Kumasi 9%, in that order.

By implementing a one-year development plan, the Busia administration demonstrated its determination to alleviate the housing crisis that notably beset the nation's major cities. In light of an annual housing demand of 26,000 units, the objective of the plan was to achieve a 10-person occupancy rate per house. The accommodation units and

their concomitant costs were not specified in this plan (Ansah & Ametepey, 2014). His plan increased by 25% of the 8,000 units that were originally intended, primarily because of finances.

1972 saw the establishment of the National Low-Cost Housing Committee under the supervision of the Ministry of Works and Housing, when the National Redemption Council, led by Ignatius Kutu Acheampong, assumed power. In order to support the construction of affordable accommodation for low-income households in urban regions throughout Ghana, this initiative was granted a capital injection of 10 million old Ghana cedis. Delivery of 2,300 units was anticipated annually. At a cost of 47,602,678 old Ghana cedis, the scheme had completed the construction of 5,466 units by June 1975. Despite its considerable financial investment, it was ultimately discontinued in 1976 as it was unable to adequately cater to the intended demographic (Nelson & Ayeh, 2009). Based on the dimensions, the initial estimations put the price between 2,000 and 4,000 old Ghana cedis. Average unit cost 10,000 old Ghana cedis (\$9,803.92) at the time of completion of 5,466 units. Additionally, the cost of 6,000 units is in excess of 12,000 old Ghana cedis, or a total of 62.6 million old cedis. In light of its financial constraints, the government endeavored to inspire private sector participation as a means of supplementing its own endeavors (Agyemang).

The Armed Forces Revolutionary Council (AFRC), led by Flight Lieutenant Jerry John Rawlings, overthrew the administration of Acheampong and Akuffo between June and September 1979. An attempt to regulate housing prices in Ghana had a significant impact on housing policy and supply, despite the regime's brief duration of three months. Promptly narrowing the gap between the wealthy and the impoverished was a top priority for the AFRC administration. Real estate entrepreneurs were labeled

"crooks" and forced to sell their stock of construction materials at "controlled prices," frequently under duress, in order to achieve this objective; the assets of the nation's affluent were seized. Dr. Hilla Limann's Peoples National Party (PNP) cabinet was sworn in by the AFRC following three months in authority. In the inaugural address to the Ghanaian parliament, Dr. Limann articulated the goal of his administration, which was to provide Ghanaians with adequate accommodations. Furthermore, while emphasizing the importance of promoting the use of indigenous construction materials, including burnt bricks and tiles, and expanding the rental market, his administration acknowledges homeownership as a cherished goal. Before Jerry John Rawlings and the People's National Defence Council overthrew his government on December 31, 1981, these objectives had not been accomplished.

In an effort to address the housing issues, Rawlings oversaw the execution of numerous ventures. The Structural Adjustment Programme (SAP), the Economic Recovery Programme (ERP), and the National Shelter Strategy comprised these initiatives. In order to evaluate the housing situation in the country, the Ministry of Works and Housing established a National Housing Policy Committee in 1986, which was the impetus for the National Shelter Strategy. With the intention of enhancing the quality of life for urban residents, this was to establish a government policy and action plan aimed at providing adequate and acceptable housing units.

The Bank of Ghana (2007) reports that the provision of low-income housing was an objective of the First Medium-Term Development plan in 1997-2000 under the Ghana Vision 2020 initiative. As an effort to enhance the living conditions of the impoverished, it sought to make housing accessible to them. Remaining unimplemented

were all housing strategies outlined in this plan, alas, for lack of financial resources, private sector engagement, and political determination (Bank of Ghana, 2007).

In an effort to secure much-needed cash transfers for the housing construction industry during the height of the financial crisis in the 1980s, Ghana enrolled in the infamous Structural Adjustment Programmes (SAP) of the International Monetary Fund and the World Bank. Rent controls were loosened and the country's market was opened to imported construction materials as a result of the trade liberalization initiatives it was required to participate in (Benjamin, 2007). Subsequently, the housing market experienced a relaxation of governmental regulation and increased rental costs were the results of the resulting high inflation and construction expenses. Exorbitant rentals that were unaffordable contributed to the proliferation of slums and ghettos in numerous cities and urban regions.

With the establishment of approximately 20,000 affordable housing units in 2001, the NPP administration of John A. Kuffour attempted to alleviate the housing sector's crisis. On Borteyman and Kpone in Accra, Asokore Mampong in Kumasi, Ashanti; Akwadum site Koforidua in the Eastern region; and Akwadum site Koforidua in Tamale, approximately 4,500 units including bedsitters, single-bedroom apartments, and two-bedroom apartments were initiated in 2007. Completion was anticipated in June 2009. The endeavor to alleviate the housing challenges in the nation was undertaken by the newly formed government. Public and civil servants constituted the primary demographic targeted by this initiative. Squatters have already occupied the majority of the units, rendering them unfinished to this day. The Ayeh and Nelson-led NDC administration ceased implementation of this program in 2009.

In an effort to enhance housing provision in Ghana, the NDC administration led by John Evans Atta Mills initiated several housing initiatives in 2009. The inaugural endeavor was the implementation of a Public Private Partnership plan to construct more than 300,000 housing units within the subsequent five years (Boamah, 2014). The housing development was known as the STX housing project. Low-to-middle-income individuals were the target demographic for the housing units. The Ghanaian government regrettably terminated the STX Housing agreement due to internal disputes that arose among the involved contractual parties. The Shelter Afrique Housing Project and the Guma Group Housing Project were two additional housing initiatives that were instigated by the government but ultimately fail to materialize.

A report of the Joint Committee on Finance and Works and Housing regarding the loan agreement associated with the Saglemi Housing Project was reviewed and deemed satisfactory by parliament in 2012, during the Mahama administration. 5,000 units of affordable housing were to be built in accordance with the agreement. The Mahama administration was accused of overseeing a fraudulent transaction that misappropriated funds from the public treasury, which has since led to controversy surrounding the undertaking. Amidst accusations of funds misappropriation, the undertaking, nevertheless, came to a halt.

The Akuffo Addo administration assumed control of the nation in 2017 following John Mahama's departure. A multitude of socioeconomic challenges beset Ghana upon his inauguration, including exorbitant housing expenses. The 2016 manifesto of Akuffo Addo and the NPP included a commitment to ensure affordable and high-quality housing for all individuals, prior to their inauguration. The National Housing and Mortgage Finance Scheme was established during the government's first tenure in

office to address costs associated with housing supply and demand. 250 housing units have been finalized as part of Phase I at Tema Community 22, an undertaking in collaboration with GCB and GCB Securities. An extra 200 dwellings will be constructed during Phase II. In conjunction with GCB Securities, NHMF, and TDC, a Pilot Phase was initiated to develop an ecosystem for Real Estate Investment Trusts (REITs) that provide affordable housing. At the Kpone Affordable Housing Project in Tema Community 26, this initiative has facilitated the acquisition of eighty fully-finished apartments intended for rental purposes.

Presently, the governing party in Ghana is the New Patriotic Party (NPP). They aim to initiate a National Rental Assistance Scheme (NRAS) during their second tenure in order to rectify the short-to-medium term market failures that have affected the renter segment of the housing market. The Scheme will, in collaboration with the private sector, offer eligible Ghanaians the opportunity to pay rent in advance through the provision of low-interest financing. In addition to being insured to assure sustainability, these loans will be repaid monthly in accordance with the rent term.

## **2.2 Theoretical Review**

This section deliberates on theories that support the study and which explains the relationship between the variables involve in the study. This study is based on three theories of mortgage. The study is grounded on the loanable funds' theory as well as the lien and the title theory of mortgages. The study of mortgage finance entails the progression of mortgage loans to potential homeowners at agreed schedule of repayment over a stated period of time and also consists of a substantial body of knowledge on a number of issues such as demand and supply factors (affordable housing supply, barriers to homeownership as well as macro-economic factors).

### **2.2.1 The Loanable Funds Theory**

Swedish economist Knut Wicksell established the loanable funds theory of interest rates, which Ohlin et al. subsequently developed (Marcharia & Wanyoike, 2016). A number of other economists, including D.H. Robertson, are also linked to the theory. All types of credit, including savings accounts, bonds, and loans, are included in the idea. Both financial and non-financial aspects of investing and saving are taken into account. The demand and supply of money in the economy at a level where both find equilibrium affect the interest rate on mortgages, according to this hypothesis (Ayensu et al 2016). In the market for loanable funds, this theory is a standard application of supply and demand, with interest rates being considered the cost per unit of time for these funds (Mutisya, 2016).

According to Marcharia and Wanyoike (2016), there are two underlying assumptions in the theory. Initially, the loanable funds market is thought to be a single, fully integrated market, characterized by perfect money movement throughout the market.

Furthermore, since both lenders and borrowers are "price-takers" and the pure interest rate is always available in the market, there is constant competition in the market. This theory explains the behavior of interest rates in an economy where saves account for the supply of money and investments account for the demand for it.

According to Van de Minne and Teppa (2015), there is a greater supply of loanable funds than there is demand from borrowers when interest rates are high. In order to encourage additional borrowing, institutions that provide mortgage services will need to reduce their interest rates. Conversely, if interest rates are low, it means that the amount of loanable funds required will exceed the amount provided, necessitating an

increase in interest rates from financial institutions and regulators to encourage saving and restore equilibrium (Muhia, 2018).

Umuro (2015) noted that, one of the limitations of this theory is the assumption that, the national income will remain constant which is not practical as the income level changes with investment level. However, the financial and monetary situation in the economy enables regulators to react to short term and long-term interest rates.

### **2.2.2 The Lien Theory**

Theory of lien according to Mutisya (2016) was developed by Hester in 1975. The lien theory posits that, the mortgager (borrower) keep equitable and legal title of the asset but transfers the interest to the mortgagee (lender). And the lender can foreclose upon the satisfying the obligation by the borrower. Kioko (2012) cited a work done by (Medley, 2011) revealed that with lien theory, the mortgager (borrower) gains the title after signing of documents but there are hindrances that mortgagee (lenders) assures in situation of a default. The lien theory posits that, when the mortgagor default mortgage loan, the lenders may gain the legal title to secure repayment of loan by going through formal proceedings of foreclosure (Ukpai et al 2013). The lender faces difficulties to repossess mortgage in cases of default due to the borrower having the title and retain the mortgage property and assets (Kioko, 2012).

### **2.2.3 The Title Theory**

The title theory according to Mutisya (2016) was developed by Gilbert in 1968. Under the title theory of mortgages, the mortgagee (lender) keeps the legal possession until the full payment of the mortgage loan has been made. The mortgagee keeps the legal

title while the mortgager retains the equitable title. Until the mortgage loan is paid, the legal name is vested in the lender. However, the borrower is known to be the possessor of the property and the lender has the right to rents and repossession. Should the borrower default the loan, the lender will be permitted to reclamation of the property (Wainio, 2012).

According to Ukpai et al (2013), the title of the mortgaged property is divided into legal and equitable title. The legal title is given to the lender while the equitable is to the borrower. The lender becomes eligible to the legal title as well should the borrower fails to meet the demands of the mortgage. And until the full liability is paid back, the mortgagee preserves possession of the mortgage property while the borrower holds possession. The lender also have the right to immediate ownership should the mortgagor defaults (Fox, 2015).

### **2.3 Empirical Review**

In relation to the subject, this study also examined research and studies conducted by other scholars. Regarding housing and the demand for mortgage financing, this section aimed to provide a comprehensive review of the pertinent literature and empirical research. Research conducted in Ghana, Africa, and throughout the world is included. An examination of the demand and supply of finance for small enterprises in Ghana was the subject of a study by Aryeetey et al. (1994), which Evan and Adjei (2014) assessed. While the study did not explicitly establish a correlation between interest rates and credit demand, it did covertly acknowledge that medium-sized businesses had a marginally diminished inclination to obtain credit at an interest rate of 30%. An examination of the correlation between macroeconomic factors and the expansion of

the mortgage market in Kenya was undertaken by Owuor, Githii, and Mwangi (2018). An examination of the mortgage market growth, interest rates, and inflation revealed a significant and positive correlation, as determined by the study. In light of interest rates and inflation, they concluded that mortgage growth in Kenya is subjective. High lending rates are considered acceptable by both borrowers and lenders, according to Evans and Adjei (2014) in their research. It has been determined that borrowers' ability to repay loans is impacted by the high rate of lending, as their transactions fail to generate sufficient profits to cover the obligation.

The relationship between household consumption, interest rate on deposits, inflation, and GDP per capita is estimated in the study conducted by Bismark (2013) utilizing the long-run model. Long-term patterns of household consumption are significantly impacted by inflation, according to the study. Credit demand and interest rates in Ghana were the subject of an investigation by Akowuah (2011). Long-term correlation between interest rates and credit demand is negative, whereas short-term correlation is positive, according to the findings of the study.

The empirical analysis of loan-level data from 2005 to 2014 in the Netherlands was the focus of Van de Minne and Teppa's (2015) study on the supply and demand of mortgage credit. High-income households, according to the findings of the study, typically demand larger loan amounts and collateral bonds. Both loans and collateral securities exhibit a negative correlation with interest rates. Owusu ()

Manu et al. (2014) conducted a study examining the relative importance of mortgage pricing elements in determining mortgage affordability in Ghana. The findings revealed that, while all three variables are statistically significant and strongly correlated with

mortgage rates, the risk premium factor emerged as the most crucial in Ghana, surpassing the inflation premium and the real risk-free rate. Furthermore, mortgage acquisition is impeded by mortgage costs, and not all applicants find the mortgage application procedure straightforward, according to a study by Macharia and Wanyoike (2016) on the determinants of mortgage from financial organizations in Nukuru, Kenya. Furthermore, the study unveiled that the mortgage products provided satisfy the demands of the market irrespective of economic stratification.

Boabang (2015) examines how the cost and supply of mortgage finance are influenced by inflation and exchange rates. Due to the probable depreciation of the principal repayment on loans, the country's volatile macroeconomic conditions present lenders with a formidable challenge, as they are confronted with an elevated risk. Owing to the fact that, as noted by Owusu-Manu (2014), higher inflationary regimes will levy borrowers unaffordable interest rates, high interest rates will either force lenders to cease operations or induce borrowers to default on their loans. A low interest rate, conversely, poses a significant risk to the lender, especially in an inflationary economy characterized by high levels of instability. Moreover, according to Demyanyk et al. (2011), an increase in interest rates has an impact on the cost of mortgage payments, which consequently reduces housing demand.

When lenders assess mortgage default, they should consider macroeconomic factors in addition to borrower characteristics. For instance, Wu et al. (2017) found that rapid interest rate increases and economic recessions increase the likelihood that borrowers will be unable to repay their loans. A stable currency, according to Mogaka et al. (2015), is also an absolute necessity for a thriving mortgage market. Long-term foreign capital will be deterred by an unstable exchange rate.

Udoka and Kpateane (2017) conducted a study which found that erratic inflation can be correlated with the insecurity caused by the chronic fluctuations in a currency. Mortgage long-term financing is restricted by inflation. The nominal rate of interest levied is also affected by anticipated inflation, which results in costly quoted repayments. Even if inflation occurs unexpectedly in a risk-prone environment, the high-risk premium may cause real interest rates to rise. Lenders run the risk of incurring losses in the form of regular repayment due to the absence of appropriate mechanisms for monitoring inflation (Bank of Ghana, 2007). One of the primary criteria that mortgage market institutions consider is the presence of accumulated funds in the account of the borrower, according to Calabria and Institute (2013). A high level of reserves in the economy and, by extension, a substantial supply of funds in the mortgage market are indicative of a high money supply. High rates and fees associated with high interest rates make it difficult for borrowers to repay their loans. Currency devaluation can also be attributed to persistent fluctuations in exchange rates and inflation. As a result, debt service issues for debtors become more complicated (Evans & Adjei, 2014).

The mortgage market's development is significantly influenced by the demand for mortgage finance. However, according to Irungu and Okanga (2016), excessive real estate investment demand results from recurring macroeconomic volatility and breaches of financial property rights. This, in turn, drives up housing prices and poses a challenge for prospective homeowners, who are predominantly individuals with low to moderate incomes, in meeting the mortgage application requirements.

The paper by Teppa and Van de Minne (2015) employs a hierarchical trend model to estimate the supply and demand of mortgage credit. Utilizing loan-level data from 2005 to 2014 in the Netherlands, the empirical analysis is conducted. Our research indicates

that households with higher incomes utilize greater quantities of collateral and obtain larger loan amounts. Both collateral values and loan quantities are inversely correlated with interest rates. After 2007, the loan equation, which serves as an indicator of the temporal fluctuations in mortgage credit demand and supply, reveals a consistent downward trend in both variables.

A high pass-through rate of changes in credit conditions from loan to value is indicated by the strong correlation between the common trend in the collateral value equation and the common trend in the loan equation. Additionally, despite being able to borrow less, the study discovered that youthful household cohorts were capable of purchasing higher-quality homes in 2014 as opposed to 2005. Conversely, though the collateral values of senior household cohorts remained unchanged, they obtained greater loan amounts in 2014 compared to 2005. As credit restrictions increased over time, we contend that younger households accumulated less mortgage debt. In contrast, negative home equity compelled older households to enroll in mortgage loans with greater principal amounts.

Concerning the house price–loan demand nexus, Dajcman's (2020) article investigates the determinants of residential mortgage loan demand in the euro area. Prior to empirically evaluating a model for an unbalanced cohort comprising thirteen-euro area countries from 2003Q1 to 2016Q3, we ascertain the demand for residential mortgage loans.

The findings indicate that fluctuations in residential mortgage loan demand are positively correlated with the advance of home prices. Changes in the demand for mortgage loans were also discovered to be positively correlated with GDP growth. A

negative correlation exists between fluctuations in demand for residential mortgage loans and increases in interest rates on residential mortgages and modifications in the credit criteria of lending institutions. As opposed to being more pronounced prior to the onset of the subprime mortgage crisis in the United States, these associations grew substantially more significant after the crisis began, according to the study.

The objective of the study by Naoi et al. (2019) is to examine whereabouts of mortgage demand among households in Japan, Australia, and the United Kingdom. The paper estimates the mortgage demand function, the housing demand function, and the initial loan-to-value ratio function using ordinary least squares and three-panel data sets, HILDA for Australia, KHPS for Japan, and USS for the United Kingdom.

Mortgages in these three nations operate under distinct institutional structures, despite the fact that homeownership is a preferred tenure and they are "recourse" loans. While the income elasticity of housing demand is comparable, the results indicate that the income elasticity of mortgage demand differs. Mortgage demand is also determined by the preferences of consumers in nations where various mortgage institutions impose restrictions. The demand for mortgages and housing has been significantly influenced by additional factors, including economic conditions and demographics.

The evolution of mortgage credit supply in the United States throughout the COVID-19 pandemic is examined by Fuster et al. (2021). We demonstrate that despite the unprecedented growth of the mortgage industry in 2020, intermediation markups increased substantially and remained elevated, preventing borrowers from fully benefiting from the reduced interest rates. The substantial increase observed during the pandemic can only be partially attributed to markups, which have a tendency to escalate during periods of high demand.

Evidence is provided in the study that credit supply was atypically inelastic due to labor market frictions and operational constraints caused by the pandemic. Furthermore, market share was gained by technology-based lenders, who were presumably less constrained by these frictions. However, spreads on mortgages lacking government guarantees and loans to the most precarious debtors increased. The impact of rising default and forbearance risk on rates for "plain vanilla" conforming mortgages was negligible. In addition to bolstering the conforming segment's credit flow, the Federal Reserve purchased mortgage-backed securities.

The purpose of the study by Allen-Coghlan et al. (2021) is to assess how the economic downturn caused by the Covid-19 virus will affect the Irish housing market. This article estimates the impact on home prices of the decline in economic activity caused by the virus-related measures by augmenting an inverted demand function for housing with a residential market activity variable. Additionally, the probable trajectory of housing prices in the coming years is assessed in light of two distinct recovery scenarios. Homestead prices are anticipated to decrease in the immediate future under both scenarios.

Irish home prices are anticipated to decline over the next eighteen months due to the Covid-19 pandemic, according to the scenario analysis presented here. As an inevitable consequence of the administrative closure imposed by the Irish authorities, this price contraction is attributable to the decline in disposable income among households and the precipitous drop in mortgage market activity.

Humbatova and Hajiyev (2021) analyze the correlation between mortgage loans and real estate loans in the Republic of Azerbaijan during the ten-year period from 2010M01 to 2020M01, with a particular focus on the dependence of oil revenues on

global oil prices. For scientific purposes, the ARDL model was implemented. The Engle-Granger cointegration equation was also assessed utilizing FMOLS, DOLS, and CCR, in addition to stationary evaluations of variables (ADF, PP, and KPSS). The models' stability was investigated. Calculations and graphing were performed utilizing EViews\_9 econometric software. A theoretical conclusion was drawn from the analysis, namely that global oil prices, mortgage loans, and real estate loans are all positively correlated. We may suggest expediting the allocation of a portion of oil revenues towards real estate and mortgage loans in an effort to enhance housing.

Using annual data from Pakistan from 1973 to 2021, Ahmed, Visas, and Ul-haq (2022) intend to examine the effect of crude prices on housing costs. Cointegration analysis was conducted utilizing the Johansen-useless test, while unit-root analysis was conducted utilizing the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) tests. Dynamic ordinary least squares (DOLS) and fully modified ordinary least squares (FMOLS) are employed to assess the robustness of the error correction model in the short run. The Chow breakpoint test confirmed the presence of parameter instability, whereas the cumulative sum (CUSUM) and CUSUM of Squares tests were employed to assess the model's stability. Cause and effect were determined using the impulse response function.

Inflationary pressures on housing prices are one consequence of rising oil prices, according to the findings. The housing sector, as well as the overall economy, is profoundly impacted by inflation, which is the most critical factor. Moreover, housing prices are substantially influenced by lending and exchange rates. OLS results are robust, according to the findings of FMOLS and DOLS. Home prices and energy prices are bidirectionally related, as predicted by the variance decomposition model. In order

to regulate the supply and demand for urban housing in Pakistan, the government must consistently formulate a housing policy.

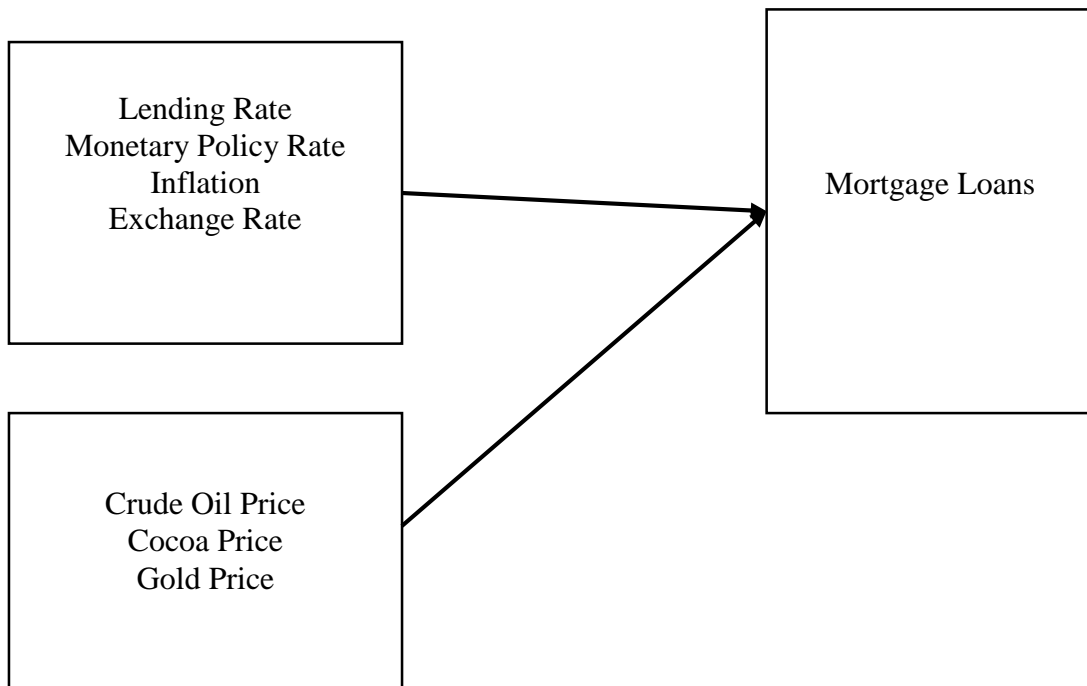
From 2010 to 2020, the objective of the research conducted by Okyere and Mensah (2021) was to determine how macroeconomic variables, such as the cocoa price and bank-specific attributes, affected the profitability of banks. This research expands upon the examination of cointegration and the impulse response by incorporating the Vector Error Correction Model (VECM) and demonstrating significant short-term and long-term dynamic impacts on the profitability of banks. Short-term bank profitability was found to be negatively correlated with cocaine prices, according to the study. As indicated by the estimated error correction term, the profitability of the banking sector approaches long-term equilibrium. A unidirectional relationship exists between cocoa price and bank profitability, according to the results of the causality test. Consequently, the profitability of banks is substantially impacted by cocoa fees. A revenue and stabilization fund during the cocoa price surge are among the counter-cyclical policies that are called into question by the findings. When deliberating on policy matters such as bank profitability, policymakers may conscientiously contemplate the importance of cocoa price.

In their study, Rahayu and Sabtiyah (2019) aimed to determine the impact of mortgage income, inflation rate, gold price, and mortgage income on the financial distribution of Rahn. Additionally, they sought to determine the indirect effect of return on assets (ROA) as an intervening variable on Sharia mortgages in Indonesia during the period 2014-2016. The methodology employed in this investigation was quantitative in nature. 36 monthly statements of Sharia mortgages in Indonesia from 2014 to 2016 comprised the samples. Utilization of path analysis as the method of analysis. Inflation rates have

a negative and statistically significant impact on return on assets (ROA), whereas mortgage income and gold prices have a positive and significant effect on ROA, according to the research findings. In contrast to the gold price, mortgage income, and return on assets (ROA), which all have a positive and statistically significant impact on Rahn's financial distribution, the inflation rate has no discernible influence. Further, Rahn's financial distribution is influenced by mortgage income, the price of gold, and the inflation rate, all of which are mediated by ROA.

## **2.4 Conceptual Framework**

The aim of the study is to analyze the determinants of demand for mortgage loans in Ghana. The research developed a conceptual framework that establishes the connection between variables involved in the study. The conceptual framework is designed to examine the determinants of demand for mortgage finance. It also enables the researcher to establish the relationship between the variables involved in the study. With this study, the conceptual framework illustrates the determinant of demand for mortgage finance as well as the relationship between determining factors of the demand for mortgage service. The figure below shows the conceptual framework of the study.



**Figure 2.1: Conceptual Framework**

Source: Author's Construction (2023)

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter shows the methodology that was employed in this study. The chapter consists of research design, Study Population, Sample and Sampling Technique Sources of Data, Measurement of Variables, and the analysis of data.

#### **3.1 Research Design**

The methodology for this study was a descriptive design. Investigations with a descriptive design focus on the features and description of individuals or groups, whereas diagnostic research studies aim to ascertain the frequency of occurrence of something or its connection to another thing (Lenz et al., 2016). Before conducting more study, researchers might use descriptive research to fully examine the context of a topic. Furthermore, both the independent and dependent variables under study are clearly and uniquely specified by this method. Additionally, it steadfastly adheres to the initial set of study objectives, reducing or eliminating subjectivity in judgments, testing hypotheses, arriving at more objective results, and figuring out causality difficulties.

#### **3.2 Sources of Data**

The data of this study was sourced from secondary sources. The data were collected from the Bank of Ghana's official website. Secondary population data gathering refers to information acquired from existing sources like journals, papers, periodicals, annual study reports, and other publications rather than directly from the source or a research institution (Wiredu, 2019).

### **3.3 Sample and Sampling Technique**

The main data for this study was secondary data from September 2019 to April 2023. This period was selected based on the fact that there existed a constant in the presentation of the financial statements. The data is made up of monthly data of the various variables used in the study which include macroeconomic and commodities price. The regression assumption, which guided the choice of this time frame, states that a model is better suited for forecasting or prediction the more data it has over a given period of time. Furthermore, the data that was provided really covered a 44-month period.

### **3.4 Data Analysis**

The acquired data was analysed using STATA. Regression analysis is being used in this study to determine the relationship between the variables being investigated. In the data analysis, it mixes time series with cross-sectional data. To analyse the acquired data, both descriptive and correlational, the study will employ a multiple-panel linear regression data analysis approach. In the data analysis, it mixes time series with cross-sectional data. Mean, Maximum, Minimum, and Standard Deviations are used in descriptive statistics to quantify the primary performance factors.

### **3.5 Model Specifications**

The paper adopted a regression model to institute the connection amid the variables of the study as recommended by Hair, et al. (2006). The model specification is presented here:

$$MOL = \beta_0 + \beta_1LER + \beta_2INL + \beta_3MPR + \beta_4EXR + \beta_5COP + \beta_5GOP + \beta_6EXR + \varepsilon$$

Where:

MOL = Mortgage Loans

LER = Lending Rate

INL = Inflation

MPR = Monetary Policy Rate

EXR = Exchange Rate

COP = Crude Oil Price

COP = Cocoa Price

GOP = Gold Price

B = coefficient of independence variables

$\varepsilon$  = Error term within a confidence interval of 5%

### **3.6 Measurement of Variables**

Variables have a slightly different meaning and use in statistics, although they have a little overlap with algebraic meaning, therefore their uses and definitions are vastly different. The elements which include lending rate, inflation, monetary policy rate, the exchange rate, cost of commodities like crude oil, cocoa and gold and also the amount granted as mortgage loans by banks are been conceived as the variables in the study.

#### **3.6.1 Lending Rate**

Conde and Gattini (2019) define the lending rate as the bank rate that typically satisfies the private sector's short- and medium-term financing needs. This rate is typically varied based on the financing goals and the creditworthiness of the borrowers. Increases in lending rates are expected to negatively impact borrowers by driving up interest costs on credit cards, mortgages, auto loans, and other forms of financing because they will

restrict their disposable income and cash flow (Obstfeld and Posen, 2020). The lowest interest rate at which commercial banks are willing to lend money serves as a gauge.

### **3.6.2 Inflation**

Wollie (2018) defines inflation as the rate at which prices rise over a specified time period. Usually, inflation is measured broadly, as in the case of a country's cost of living increase or general price increase. Three general categories can be used to classify the primary drivers of inflation: cost-push, inflation expectations, and demand-pull factors. Lenders and investors may demand higher interest rates if they expect future inflation to be higher in order to offset the gradual depreciation of buying power. As a result, mortgage rates could increase in reaction to inflation forecasts. Usually, inflation is a good indicator of how the economy is doing (Kose et al., 2019). The Consumer Price Index (CPI), which calculates the percentage change in the cost of a basket of goods and services that households consume, is the most well recognized indicator of inflation.

**Table 1: Measurement of Variables**

<b>Variables</b>	<b>Construct</b>	<b>Measurement</b>	<b>Source</b>
<b>Dependent</b>			
Mortgage Loans	N/A	log of the amount of money granted by banks as mortgage loans	BoG, 2023
<b>Independent</b>			
<b>Macroeconomic Factors</b>			
	Lending Rate	The minimum interest rate at which commercial banks can lend.	BoG, 2023
	Inflation	the percentage change in the price of a basket of goods and services consumed by households	BoG, 2023
	Monetary Policy Rate	Policy Rate set by the central banks of Ghana	BoG, 2023
	Exchange Rate	the rate at which the cedi is changed to US dollars	BoG, 2023
<b>Commodities Price</b>			
	Crude Oil	log of international Brent Crude Oil Price (US\$/Barrel)	BoG, 2023
	Cocoa	log of International Cocoa Price (US\$/Tonne)	BoG, 2023
	Gold	Log of International Gold Price (US\$/fine ounce)	BoG, 2023

Source: Author's construct (2023)

### 3.6.3 Monetary Policy Rate

In order to control economic swings and maintain price stability—that is, low and steady inflation—central banks employ monetary policy (Fabris, 2018). Many developed economies have explicit inflation targets set by their central banks. Additionally, a lot of emerging nations are switching to inflation targeting. Monetary policy that is expansionary promotes inflationary pressure and expands the money supply. A nation's interest rate, or the cost at which money may be borrowed, and the total amount of money in circulation are what determine its monetary policy (Kwakye, 2012).

### **3.6.4 Exchange Rate**

In contrast, it would cost the borrower more in their home currency to repay the mortgage if the exchange rate of their home currency declined relative to the currency in which the mortgage is denominated. According to Mroczkowski (2021), a mortgage contract is an arrangement between a borrower and a lender that is enforceable by law and is unaffected by fluctuations in exchange rates.

### **3.6.5 Commodities**

Interest rates rise in response to the rising inflation as a result of rising costs of commodities caused by rising commodity prices. This rising price action is inflationary. Bond prices decrease in tandem with an increase in interest rates because of the inverse link between the two. Gold, cocoa, and crude oil are among the commodities that have a big impact on Ghana's lending rate.

### **3.6.6 Mortgage Loans**

By taking out a mortgage, you give the lender the authority to take your property if you are unable to repay the loan's principal and interest (Campbell, Clara, & Cocco, 2021). Mortgage loans are taken out to buy a home or to obtain a loan that is backed by an existing residence. A percentage of the principal that is still owed is used to compute mortgage interest.

## **3.7 Diagnostic Test**

### **3.7.1 Stationarity Test**

Many time series approaches make the assumption that the data are steady, a frequent assumption known as stationarity (Xie et al., 2022). The fact that the mean, variance, and autocorrelation structure remain constant across time characterizes a stationary

process. Therefore, the state of a stationary time series is called stationarity. In contrast, a time series that exhibits non-stationarity is one whose statistical characteristics are subject to time-varying fluctuations. For the Stationarity Test, the Autoregressive Moving Average Model and the Augmented Dickey-Fuller (ADF) Test were employed.

### **3.7.2 Multicollinearity Test**

Multicollinearity is a statistics technique needed to determine whether or not the independent variable in a regression model has a strong correlation. It relies on the correlation matrix between the independent variables. According to Xie et al (2022) variance inflation factor VIF is computed for each independent variable. The VIF assesses the degree to which the addition of the other factor in a model increases the variance of a variable. There is no correlation between the variable and the other variables in the model if the VIF is equal to 1. A VIF between 1 and 5 implies a moderately positive correlation between the variables and the other model variables (Pandey & Pandey, 2021). A VIF greater than 5 implies a strong relationship between the variable and the other model variable.

### **3.7.3 Autocorrelation Test**

The autocorrelation test assesses the linear relationship between two variables. The test is based on correlation, which measures the linear connection existing between two variables. The purpose of the test is to evaluate whether the relationship between two variables is linear or nonlinear Xie et al 2022. The Durbin –Watson test is used to determine the presence of autocorrelation. The test statistic is computed by dividing the sum of the squared differences between consecutive values in the data set by the sum of the data set's squares. The test statistic is close to 0 if the data set is auto-correlated.

Pandey and Pandey, 2021. According to the test, scores between 0 and 2 show positive autocorrelation. Additionally, values between 2 and 4 indicate negative autocorrelation.

#### **3.7.4 Heteroscedasticity Test**

The Heteroscedasticity test determines if the variance of the dependent variables is the same for all values of an independent variable. If the variances are not the same, then the data are heteroscedastic (Baltagi, Pirotte & Yang, 2021). The researcher estimates the variances of the dependent variables for each value of the independent variable before conducting the test. Next, a regression is conducted using the independent variable as the predictor and the dependent variable's variance as the outcome. Pandey and Pandey, 2021. The data are heteroscedastic if the predictor is judged to be significant. If the predictor is not statistically significant, the data are not heteroscedastic.

## CHAPTER FOUR

### DATA ANALYSES AND DISCUSSIONS

#### 4.0 Introduction

The findings of the study's analysis are presented in this chapter along with debates. The results were once more examined in terms of their managerial ramifications and their connection to certain empirical assertions made in the literature review. Following the chronological sequence of the individual objectives, the findings are displayed in tables.

#### 4.1 Descriptive Statistics

Table 2 presents the descriptive statistics of the variables used in the study. The variables include Mortgage Loans, Lending Rate, Inflation, Monetary Policy Rate, Exchange Rate Crude Oil Price, Cocoa Price and Gold Price.

**Table 2: Descriptive Statistics**

<b>Variable</b>	<b>Obs.</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Lending Rate	44	24.09	5.03	20.04	36.64
Monetary Policy Rate	44	17.42	4.96	13.50	29.50
Inflation	44	19.09	14.99	7.50	54.10
Exchange Rate	44	6.91	2.14	5.29	13.10
Mortgage Loans '000	44	7,090.37	11,066.23	3,327.22	47,651.34
Crude Oil Price US\$	44	71.21	22.97	26.63	117.22
Cocoa Price US\$	44	2,509.81	143.23	2,206.77	2,924.37
Gold Price US\$	44	1,774.73	133.56	1,471.15	2,000.69

**Source: Author's Estimate**

As shown in Table 2, the study revealed that the mean and standard deviation recorded for lending rate were 24.09 and 5.03 respectively. The minimum value recorded was 20.040 and a maximum value of 36.64. This indicates that on average the lending rate charged for the period of this study which is 44 months was 24.09%.

In the case of the Monetary Policy Rate for the 44 months, the minimum rate was 13.500 and a maximum rate of 29.50, the mean rate was 17.42 with a standard deviation of 4.96. This result indicated that the average monetary policy rate for the 37-month period was 17.42%.

In the case of the inflation rate, the maximum rate recorded is 54.100 and the minimum rate is 7.500, the standard deviation for the inflation rate within the period is 14.99, and a mean of 19.09. This implies that on average the rate at which prices increase over a period of 34 months, resulting in a fall in the purchasing value of money is 19.09%. The exchange rate which is the value of the Ghanaian cedi for the purpose of conversion to the USA dollar recorded a maximum rate of 13.10 and a minimum rate of 5.29, a standard deviation of 2.14, and a mean rate of 6.91. This implies that the average rate of the cedi to dollars for the 44 months was GHC6.91 to US \$1.

The study revealed that the mean value recorded was GHC7,090,370.00 for Mortgage Loans with a standard deviation of GHC10,939,760.00, the minimum value of GHC3,327,220.00 and maximum value of GHC47,651,340.00 were recorded. This indicates that the lowest amount given by the banks as a Mortgage Loan for the period of 44 months was GHC3,327,220.00 and the highest loan was GHC47,651,340.00.

With respect to the international crude oil price per barrel, the mean amount recorded was US\$71.21 with a standard deviation of US\$22.97, the minimum amount was US\$26.63 and the maximum amount was US\$117.22. This implies that the average price for which crude oil was sold on the international market for 44 months from September 2019 to April 2023 was US\$71.21 per barrel.

With the Cocoa Prices per tonne, the mean rate recorded was US\$2,509.81, with a standard deviation of US\$143.23. The maximum value was US\$2,924.37 and the minimum value was US\$2,206.77. A standard deviation of US\$143.23 and a mean of US\$2,509.81 indicate that there were fluctuations in the price of Cocoa Prices within the 44-month period.

In the case of the Gold Price per fine ounce, the maximum price recorded for the 44-month period was US\$2,000.69 and the minimum price was 1,471.15. The mean recorded was US\$1,774.73 and a standard deviation of US\$133.56 per fine ounce. This result indicates that the average price gold was sold on the international market was US\$1,774.73.

#### **4.2 Augmented Dickey-Fuller (ADF) Test**

ACFs tend to zero relatively rapidly, as correlograms demonstrate, which supports the first difference: all five series appear stationary. The results are displayed in Table 3 and indicate whether or not the series is now stationary after the first difference is calculated using the unit root test with Augmented Dickey-Fuller.

Cheung and Lai (1995) state that the data has a unit root and is non-stationary when the P-value is greater than 0.05, but it is stationary when the P-value is less than 0.05. As a result, the null hypothesis ( $H_0$ ) is rejected.

The unit root is present in all five series, as indicated by the P-values in Table 4.2, which is based on the results of the Augmented Dickey-Fuller test which are not statistically significant.

**Table 3: Augmented Dickey-Fuller (ADF) Test**

<b>Results</b>		<b>MOL</b>	<b>LER</b>	<b>INL</b>	<b>MPR</b>	<b>EXR</b>	<b>COP</b>	<b>COP</b>	<b>GOP</b>
Test Critical Values	1% level	-3.628	-3.628	-3.628	-3.628	-3.628	-3.628	-3.628	-3.628
	5% level	-2.95	-2.950	-2.950	-2.95	-2.950	-2.950	-2.950	-2.950
	10% level	-2.608	-2.608	-2.608	-2.608	-2.608	-2.608	-2.608	-2.608
T-Statistic		-3.189	0.166	-1.230	2.124	-0.972	-1.181	-2.474	-2.406
Prob.		0.0206	0.970	0.6607	0.9988	0.7633	0.682	0.122	0.140

**Note:** MOL=Mortgage Loans, LER=Lending Rate, INL=Inflation, MPR = Monetary Policy Rate, EXR = Exchange Rate, COP=Crude Oil Price, COP= Cocoa Price and GOP= Gold Price

**Source: Author's Estimate**

The five series' estimated ADF test-statistic values, with varying lag durations, are less than the critical values at the 1 percent, 5 percent, and 10 percent levels of significance, respectively (based on the Schwarz Information Criterion). All three series do, therefore, have a unit root since we are rejecting the null hypothesis. Based on the outcomes of the Augmented Dickey-Fuller, we determine that all five series are stationary (Table 3).

### **4.3 Autoregressive Moving Average Model**

Compare the p-value for each term in the model to your significance threshold in order to evaluate the null hypothesis and decide whether the relationship between the response and each term in the model is statistically significant. Table displays the outcomes of the.

**Table 4: Autoregressive moving average model**

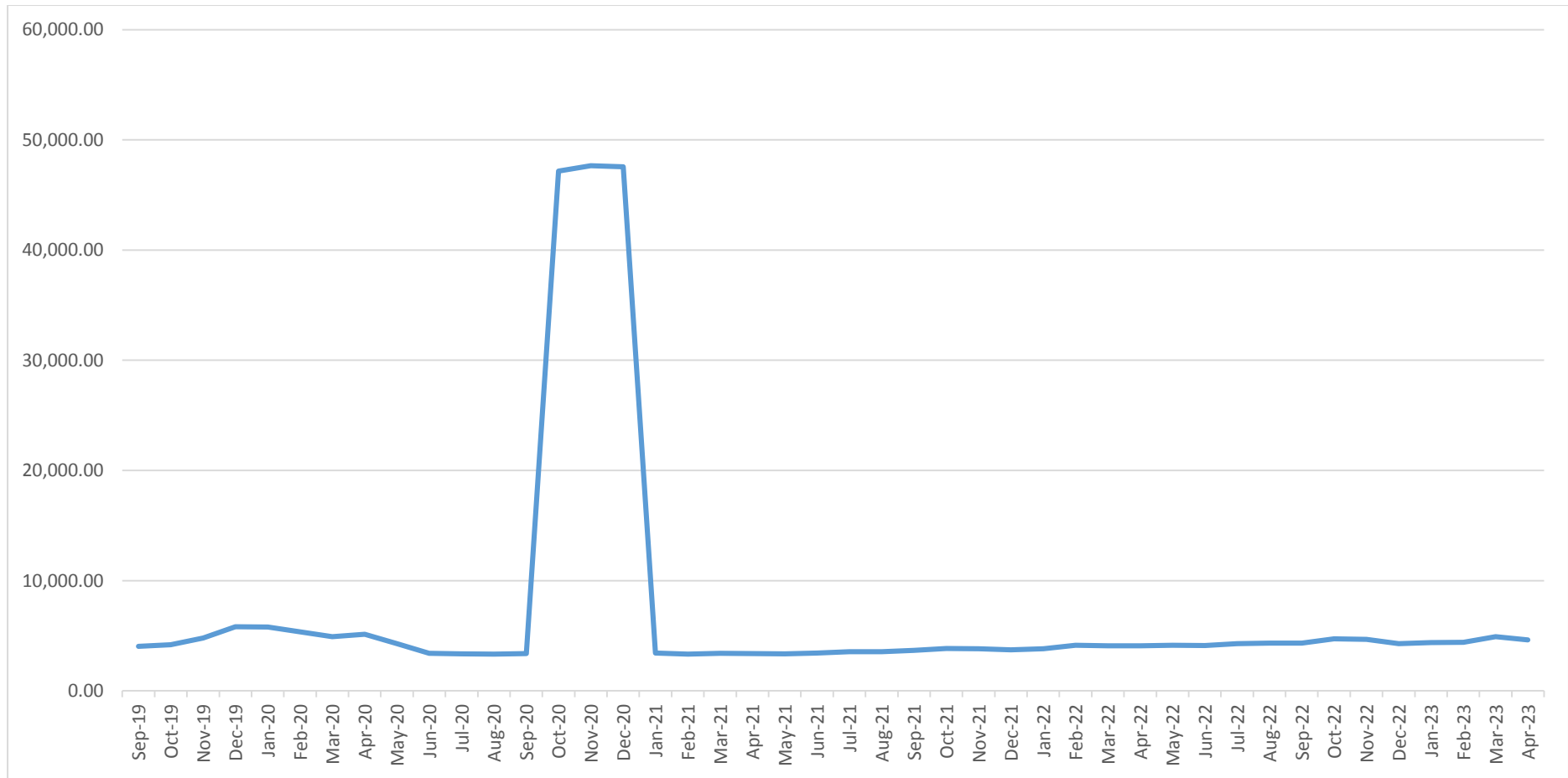
<b>Sample: 1960m3 - 1963m9</b>				<b>Number of obs</b>	<b>=</b>	<b>44</b>
Log likelihood = 12.39073				Wald chi2(3)	=	93.51
				Prob > chi2	=	0.0
		<b>OPG</b>				
D.loan	Coef.	Std. Err.	z	P> z	[95% Conf.	Interval]
loan						
_cons	-.0045081	0.011746	-0.38	0.701	-.0275297	0.018514
<b>ARMA</b>						
<b>ar</b>						
L1.	.8014435	1.322977	0.61	0.545	-1.791545	3.394431
<b>ma</b>						
L1.	-.9950197	.	.	.	.	.
L2.	.0003092	0.566649	0	1.000	-1.110302	1.11092
L3.	-.9950197	0.528877	-1.88	0.060	-2.031599	0.041559
L4.	.9999999	.	.	.	.	.
/sigma	.1597178	0.104943	1.52	0.064	0	0.365402

**Source: Author's Estimate**

In these results, the p-values for the Ljung-Box chi-square statistics are all greater than 0.05 and none of the correlations for the autocorrelation function of the residuals are significant. It can be concluded that the model meets the assumption that the residuals are independent.

#### **4.4 Trend in Mortgage Loans**

This section of the study presents that mortgage Loans for the 44 periods from September 2019 to April 2023. The results are provided in Figure 2. The amount of the mortgage debt was increased from September 2019 to December 2019, as Figure 2 illustrates, but it began to decline in January 2020, the same month that the WHO proclaimed COVID-19 to be a pandemic. The new coronavirus that caused a respiratory ailment in a group of persons in Wuhan City, Hubei Province, China, was confirmed by the World Health Organization (WHO) on January 12, 2020. (World Health Organization, 2020). Fuster et al. (2021) provide evidence that the unusually inelastic credit supply was caused by pandemic-related labor market frictions and operational bottlenecks. Technology-based lenders, who were probably less impacted by these frictions, gained market share. The Covid-19 slump is expected to cause Irish housing prices to decline during the next 18 months, according to the scenario analysis provided by Allen-Coghlan et al. (2021) study. The rapid loss in mortgage market activity and the reduction in household disposable income that will certainly follow the Irish authorities' administrative shutdown are the causes of this price contraction.



**Figure 2: Trend in Mortgage Loans**

**Source: Author's Estimate**

The decline continued until September 2020 when the highest loan was granted to the customers as mortgage Loans. Similar to this, Van de Minne and Teppa (2015) found a strong correlation between the common trend in the loan equation and the same trend in the collateral value equation, indicating a high pass-through rate of modifications in credit terms from loan to value.

#### **4.5 Correlation Matrix**

The correlation matrix can be seen in Table 4. For that variable, the correlation value in a correlation research shouldn't be greater than 0.8. A concern with multicollinearity is indicated by values higher than 0.8.

**Table 5: Correlation Matrix**

	<b>MOL</b>	<b>GOP</b>	<b>COP</b>	<b>COP</b>	<b>LER</b>	<b>MPR</b>	<b>INL</b>	<b>EXR</b>
MOL	1							
GOP	-0.22 0.00	1						
COP	0.61 0.00	0.16 0.29	1					
COP	-0.07 0.66	0.11 0.48	0.15 0.34	1				
LER	-0.05 0.75	0.40 0.01	0.31 0.04	0.41 0.01	1			
MPR	-0.05 0.00	0.49 0.00	0.36 0.02	0.40 0.01	0.57 0.00	1		
INL	-0.15 0.00	0.53 0.00	0.34 0.02	0.08 0.62	0.46 0.00	0.60 0.00	1	
EXR	-0.07 0.65	0.55 0.00	0.22 0.15	0.44 0.00	0.68 0.00	0.52 0.00	0.56 0.00	1

**Note:** **MOL**=Mortgage Loans, **LER**=Lending Rate, **INL**=Inflation, **MPR** = Monetary Policy Rate, **EXR** = Exchange Rate, **COP**=Crude Oil Price, **COP**= Cocoa Price and **GOP**= Gold Price

**Source: Author's Estimation.**

As shown in Table 4, Mortgage Loans were found to correlate with Gold Price ( $r=-0.22$ ,  $p=0.00$ ), Cocoa Price ( $r=0.61$ ,  $p=0.00$ ), Monetary Policy Rate ( $r=-0.05$ ,  $p=0.00$ ) and Inflation ( $r=-0.15$ ,  $p=0.00$ ).

#### 4.6 Test of Heteroscedasticity

There are several methods of detecting Heteroscedasticity in regression models. However, the present study resorted to using the Breusch-Pagan Godfrey Heteroscedasticity Test due to its robustness and wide acceptance.

**Table 6: Breusch-Pagan / Cook-Weisberg test for Heteroscedasticity**

<b>Ho</b>	<b>Constant Variance</b>
Variables	Fitted Values Of Mortgage Loans
chi2 (1)	0.09
Prob > chi2	0.762

**Source: Author's Estimation.**

Heteroscedasticity is assumed to be present if the test's probability F-statistics demonstrate significance. The models' significant results, as indicated in Table 4.3, indicate that heteroscedasticity was not an issue for the investigation.

#### 4.7 Multiple Regression Analysis

Multiple regression analysis is the process of creating a model that ascertains the relationship between the independent and dependent variables. Predicting the result of the secondary data sample is the aim of this investigation. Building a model of the link between the gathered secondary and explanatory data is the aim of this investigation. The multiple regression analysis's findings are presented in Table 6.

**Table 7: Multiple Regression Analysis**

<b>Variables</b>	<b>Coef.</b>	<b>Std. Err.</b>	<b>t</b>	<b>P&gt; t </b>
Crude Oil Price	-0.4855	0.2365	-2.0500	0.0470
Cocoa Price	9.9061	1.3306	7.4400	0.0000
Gold Price	-1.7857	0.9598	-1.8600	0.0710
Lending Rate	-0.0085	0.0259	-0.3300	0.7460
Monetary Policy Rate	-0.0289	0.0335	-0.8600	0.3930
Inflation	-0.0066	0.0029	-2.2600	0.0300
Exchange Rate	0.1023	0.0376	2.7200	0.0100
_cons	-23.1730	5.1688	-4.4800	0.0000

Number of obs. =	44
F( 7, 36)	9.030
Prob > F	0.000
R-squared	0.637
Adj R-squared	0.567
Root MSE	0.184
Durbin –Watson test	1.980

**Source: Author’s Estimation.**

The model summary is reviewed at the outset of the investigation. The ability of the regression line to explain the entire variation in the dependent variable is indicated by this model. The second piece of information the researcher found was the R square. R square has a value of 0.637, or 63.7 percent. This indicates that 63.7% of the variance in the dependent variable can be explained by the independent variable. Errors account for 36.3 percent of the remaining amount. A score of 0 to 2 on the Durbin-Watson test indicates positive autocorrelation. Furthermore, negative autocorrelation is indicated by values between 2 and 4. Table 6 also shows the effect of the independent variable on the dependent variable. If the independent variable affects the dependent variable, it is considered significant and vice versa. The most important researcher's attention to this

ANOVA table is focused on the values in the Prob > F column. This is because it shows the exact significance level of ANOVA. Numbers in the "Sig" column are valid only if the P ( $\alpha$ ) value is less than 0.05. Values greater than the P value are considered insignificant.

As shown in the Table, this value is 0.000, which is significant because it is smaller than the P value. The above information shows that the independent variables predict the dependent variable significantly. In the Table is also the coefficient, the significant value is whereby the P-value is below 0.05.

As shown in Table 6, gold price ( $\beta=-1.7857$ ,  $t=-1.8600$ ,  $p=0.0710$ ), lending rate ( $\beta=-0.0085$ ,  $t=-0.3300$ ,  $p=0.7460$ ) and Monetary Policy Rate ( $\beta=-0.0289$ ,  $t=-0.8600$ ,  $p=0.3930$ ) were found to have insignificant influence on the dependent. But four of the other variables which include crude oil price ( $\beta=-0.4855$ ,  $t=-2.0500$ ,  $p=0.0470$ ), Cocoa Price ( $\beta=9.9061$ ,  $t=7.4400$ ,  $p=0.0000$ ), Inflation ( $\beta=-0.0066$ ,  $t=-2.2600$ ,  $p=0.0300$ ) and Exchange Rate ( $\beta=0.1023$ ,  $t=2.7200$ ,  $p=0.0100$ ) were found to have insignificant influence on the dependent.

#### **4.8 Discussion of Results**

Examining Ghana's mortgage loan demand pattern was the study's primary goal. A secured loan that you can obtain by offering your asset as collateral to the lender is a mortgage loan, commonly known as a mortgage (Olanrewaju & Woon, 2017; Iosifidi, Panopoulou & Tsoumas, 2021). An agreement between a borrower and a mortgage lender to purchase or refinance a home without having all the money up front is known as a mortgage loan, according to Brueggeman and Fisher (2011).

According to the report, until January 2020, when the COVID-19 epidemic brought the world to a complete halt, there was consistently a rise in both the supply and demand for mortgage loans. However, the maximum loan amount that banks provided to mortgage clients went up in September 2020, and a reduction in that amount was noted in January 2021. There was a consistent rise in mortgage loans after January 2021. The end result is consistent with the findings of Van de Minne and Teppa's (2015) study, which showed that even with lower borrowing costs, young household cohorts were able to purchase higher-quality homes in 2014 compared to 2005.

Conversely, while their collateral values remained same, older family groups took out more loans in 2014 than they did in 2005. After determining the demand for residential mortgage loans, Dajcman (2020) conducts an empirical evaluation of a model for an unbalanced panel of 13 countries in the euro area, spanning the years 2003Q1–2016Q3. While homeownership is a favored tenure and the mortgages are "recourse" loans, Naoi et al. (2019) find that the institutional frameworks of the mortgage markets in these three nations differ from those of the housing markets. The findings show that although home demand's income elasticity is identical, mortgage demand's is different.

The study's second goal was to investigate the variables affecting the market for mortgage loans. The following variables are taken into consideration: the price of crude oil, cocoa, gold, loan rate, rate of monetary policy, inflation, and exchange rate. This theory holds that the amount of money that is available for use in the economy at a point where supply and demand are equal determines the interest rate on mortgages (Ayensu et al 2016).

Mortgage loans, the dependent variable in the study, were shown to be unaffected significantly by the gold price ( $\beta=-1.7857$ ,  $t=-1.8600$ ,  $p=0.0710$ ), lending rate ( $\beta=-0.0085$ ,  $t=-0.3300$ ,  $p=0.7460$ ), and monetary policy rate ( $\beta=-0.0289$ ,  $t=-0.8600$ ,  $p=0.3930$ ). This suggests that the demand for mortgage loans by consumers is not much impacted by the price of gold, lending rates, or monetary policy rate. This demonstrates that the price at which gold is sold on the global market, the policy rate established by central banks, and the minimum interest rate at which commercial banks can lend to clients have little bearing on the demand for mortgage loans. There is a common perception in Ghana that commercial banks are charging higher interest rates despite attempts by the government and central bank to lower lending costs by lowering prime rates (Quashigah & Kwashigah 2017).

The findings of Rahayu and Sabtiyah's (2019) study indicate that whilst inflation rates have a large and negative impact on ROA, mortgage income and gold prices have a positive and considerable impact. Rahn's financial distribution is positively and significantly impacted by Mortgage Income, Gold Price, and ROA; nevertheless, Rahn's financial distribution is negatively and marginally impacted by the inflation rate. Four other variables, namely the price of crude oil ( $\beta = -0.4855$ ,  $t = -2.0500$ ,  $p = 0.0470$ ), the price of cocoa ( $\beta = 9.9061$ ,  $t = 7.4400$ ,  $p = 0.0000$ ), the inflation rate ( $\beta = -0.0066$ ,  $t = -2.2600$ ,  $p = 0.0300$ ), and the exchange rate ( $\beta = 0.1023$ ,  $t = 2.7200$ ,  $p = 0.0100$ ), were found to have minimal impact on the dependent variable, which is mortgage loans. These findings suggest that the rise in crude oil prices has a detrimental effect on mortgage loans. This demonstrated that a rise in the price of crude oil lowered the amount of mortgage loans approved. Quite the reverse; Humatova and Hajiyev (2021) found a positive association between global oil prices, mortgage loans, and real estate

loans. Rising oil prices have an effect on house prices, among other things, according to the findings of (Ahmed et al., 2022).

The research additionally demonstrated that mortgage loans are adversely affected by the rate of inflation. This demonstrated that a rise in the rate of inflation lowered the quantity of mortgage loans approved. According to Ahmed et al. (2022), inflation is the primary issue that impacts not only the housing industry but the economy as a whole. Furthermore, Teye et al. (2015)'s research shows that several economic factors, including inflation, economic growth, interest rates, and currency rates, have varying effects and affect the demand for house loans.

The study also showed a significant correlation between mortgage loans and cocoa prices. This suggests that when cocoa prices rise, so does the amount that can be lent for a mortgage. Similar to this study, Okyere and Mensah's (2021) research established a short-term negative correlation between bank profitability and the price of coca. The convergence of the banking sector's profitability towards long-term equilibrium is indicated by the anticipated error correction term.

It was also discovered that mortgage loans are positively impacted by exchange rates. This suggests that a rise in the exchange rate corresponds to an increase in the amount of a mortgage loan that is approved. A stable currency is essential for a functioning mortgage market, according to Mogaka et al. (2015). An unstable currency rate will deter foreign investment over the long run. The high interest rates and associated fees make it difficult for borrowers to repay their debts. The currency loses value due to inflation and ongoing exchange rate fluctuations. This increases the difficulties borrowers face in repaying their debts (Evans & Adjei, 2014).

According to the report, monetary policy tightening lowers bank credit available for mortgages to households and slows down economic growth. The analysis shows that monetary policy has a considerable and noteworthy impact on the amount and cost of credit, with changes in credit supply on both the broad and intensive margins. A statistically and quantitatively significant bank balance sheet channel is shown by the analysis. Even when comparing loans to identical firms borrowing simultaneously from different banks, the tightening of credit conditions manifested in higher loan rates, decreased volume of new loans, and increased loan rejection rates is more pronounced for banks with lower capitalization and higher exposure to sovereign debt. As assessed by trade, public demonstrations, and commercial construction permits, the credit supply results also suggest binding impacts of monetary policy on pricing and economic activity via the bank balance sheet channel.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS**

#### **5.0 Introduction**

This chapter presents a summary of findings, conclusions, and recommendations in relation to the determinants of mortgage demand in Ghana. Specifically, to examine the trend of mortgage loan demand in Ghana and to examine the factors influencing the demand for mortgage loans.

#### **5.1 Summary of Findings**

##### **5.1.2 Trend of Mortgage Loan Demand**

The first objective of the study was to examine the trend of mortgage loan demand in Ghana. The study revealed that there was always an increase in the demand and supply of mortgage loans until January 2020 when the world became standstill because of the COVID-19 pandemic. But the highest loan amount given by the banks to mortgage customers increased in September 2020 after which a sharp decline was recorded in January 2021. After January 2021 a constant increase in the mortgage loan was recorded.

##### **5.1.3 Factors Influencing the Demand for Mortgage Loans**

The second objective of the study was to examine the factors influencing the demand for mortgage loans. The study revealed that gold price, lending rate and Monetary Policy Rate were found to have insignificant influence on the dependent variable which is Mortgage Loans. This indicates that the price of gold, the lending rate and the monetary policy rate have little or no effect on the demand for mortgage loans by customers. This shows that the price at which gold is sold on the international market, the minimum

interest rate at which commercial banks can lend to customers and the policy rate set by the central banks has insignificant influence on the demand for loan as mortgage. These results imply that the increase in the price of crude oil has a negative influence on Mortgage Loans. The study also revealed that the Inflation rate has a negative influence on Mortgage Loans. This indicated that an increase in the inflation rate reduced the amount granted as Mortgage Loans. The study also revealed that Cocoa Price has a positive influence on Mortgage Loans. This indicates that an increase in the price of cocoa leads to an increase in the amount granted as a mortgage loan. It was also found that the Exchange Rate has a positive influence on the Mortgage Loans.

## **5.2 Conclusion**

Examining the factors that influence Ghana's demand for mortgages is the study's main goal. This study's approach was based on a descriptive design. Before conducting additional study, descriptive research enables researchers to fully examine the backdrop of a research problem. This study used secondary sources to obtain its data. The information was gathered from the official Bank of Ghana website. Data collection from secondary populations is Secondary data from September 2019 through April 2023 served as the study's primary source of data. The financial accounts were presented consistently during this time period, which is why it was chosen. The information is composed of monthly statistics for the several study variables, such as macroeconomic and commodity prices.

To ascertain whether or not the independent variable in a regression model has a strong association, statisticians use multicollinearity. STATA was used to analyze the collected data. In this study, regression analysis is being performed to ascertain the relationship between the variables under investigation. The study used the unit root test

with Augmented Dickey-Fuller after taking the first difference to ascertain whether or not the series is now stationary.

The study revealed that gold price, lending rate and Monetary Policy Rate were found to have insignificant influence on the dependent which is Mortgage Loans. This indicates that the price of gold, the lending rate and the monetary policy rate have little or no effect on the demand for mortgage loans by customers. But four of the other variables which include crude oil price, Cocoa Price, Inflation and Exchange Rate were found to have insignificant influence on the dependent variable which is Mortgage Loans.

Therefore, the study concludes that the determinants of mortgage demand in Ghana include crude oil price, cocoa price, inflation and exchange rate but exclude, gold price, lending rate and monetary policy rate. This means for an individual to demand mortgage loans from banks it depends on the crude oil price, cocoa price, inflation and exchange rate.

### **5.3 Recommendations**

Based on the result of the research the following recommendations are made:

According to the report, COVID-19 has significantly decreased the amount of money banks are willing to loan for mortgages; as a result, it is advised that the appropriate policies be put in place to assist boost income once more. The study would like to suggest that an appropriate property index be created in Ghana because it would be essential to the growth of the mortgage financing industry and to enlarge the role that pension plans play in encouraging the creation of mortgage projects. It is also necessary

to do research to determine the variables that affect how mortgage interest rates are set by policy. Since banks will profit from the results of such involved investigations, they should be open to and willing to assist researchers in the study of such important themes as well as assist with data gathering. Based on the findings of the study, banks and real estate financiers ought to be open to exploring ways to incentivize the public to take out mortgages, such as by reducing interest rates or providing enticing offers and incentives to those who plan to do so.

It is recommended that banks and real estate financiers engage in social responsibility initiatives aimed at educating the public about the types of mortgage options available and which ones would be most appropriate for those receiving mortgage benefits. In order to make their loans reasonable for homeowners, financial institutions need to consider all four of these elements.

The government should work to make sure homebuyers receive mortgage assistance and appropriate market information, particularly about interest rates and property values. To give investors information on expected returns on investment and interest rate capture mechanisms in the market, this could be accomplished by creating a property price index.

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