Financial Markets, Central Bank Interest Rate and Growth of Mortgage Market in Kenya

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Abstract

To improve the mortgage finance market growth, studies have been done on financial market and growth of mortgage market. However, most of these studies focuses on other countries creating contextual gaps. Other studies, though related to the current study focused on effect on financial structure on other dependent variables, creating a conceptual gap. Some gave conflicting results while others applied weak methodologies hence the motivation for this study. Generally, the main aim of this research was to determine the relationship existing between financial markets, interest rates at the central bank and growth of mortgage market in Kenya. Under the general objective, were specific objectives which include: to examine the connection between bond market, equity market, real estate investment trusts, private credit and mortgage market growth in Kenya. The study was conducted on the basis of four different theories namely: the theory of capital market, the theory of arbitrage pricing, agency theory and financial intermediation theory. The current study adopted Positivism Philosophy reinforced by explanatory research design. The target population of the research was the 39 Mortgage Finance Institutions regulated by Central Bank of Kenya. The study had its basis from panel data generated from published and audited statements of finance of individual financial markets, Capital Market Authority and the Nairobi Security Exchange for the year period running from 2018 to 2022. The panel data was collected using data abstraction tool. The methods of descriptive statistics, correlation computation with

Pearson, and the panel regression evaluation were used to evaluate the information. Tables, charts and graphs were used to portray the data after analysis. This study adhered to all ethical considerations. Results indicate that bond market makes little to no difference in mortgage market growth in Kenya. Results also indicate that equity market makes little to no difference in mortgage market growth in Kenya. Real estate investment trusts market was found to significantly influence the mortgage market growth in Kenya. Similarly, results further indicate that private credit market significantly influences the mortgage market growth in Kenya. Findings show that interest rate fails to substantially play an interactive role in the relationship between financial markets and mortgage market. This study reveals intricate relationships among the bond market, equity market, private credit market, and the mortgage market growth in the country. While the bond and equity markets exhibit limited influence, the private credit market significantly impacts mortgage growth, underscoring the importance of diverse financing sources. The role of interest rates as moderators is minimal, with other factors like market segmentation, investor behavior, regulations, macroeconomic conditions, and long-term perspectives taking precedence. This highlights the need for integrated policies that encourage diversified financing, regulatory clarity, stability, and long-term investments to foster fruitful connections between these financial sectors and the mortgage market, advancing sustainable economic progress.

Keywords: Financial market, Interest Rate and Growth of Mortgage Market

1.0 INTRODUCTION

The mortgage finance market has a significant impact on individuals, communities, and the broader economy (Nikolaos et al., 2021). By providing access to affordable and long-term financing, the mortgage finance market contributes to housing stability, social development, and overall economic well-being (Desen, 2021). As such, growth in the mortgage finance market is desirable for economic development and a determination of its influencing factors is of important policy and practice implications. Across literature, mortgage finance market growth at global and regional contexts has been attributed to long-term funding sources which are only available financial markets; and low interest rates through which borrowers can obtain mortgages at lower costs, resulting in increased affordability (Ogbenjuwa et al., 2020).

In the America and the United Kingdom (UK), Haag and Ferré-Sadurní (2020) report that the development and functioning of the Mortgage-Backed Securities (MBS) market, which operates within a broader bond market, has an important role to play when looking at the growth of the mortgage finance market. Financial institutions particularly package individual mortgage loans into pools and sell them as MBS to investors. In both the US and the UK, demand for funds from the financial markets to support mortgage finance growth were found to be higher at low interest rates (Keys et al., 2022).

While the mortgage finance market in Sub-Saharan Africa is relatively nascent compared to the rest of the world. This in part attributed to high interest rates providing unfavorable mortgage lending conditions (Williams & Pardo, 2021). South Africa has one of the more developed mortgage finance markets in Sub-Saharan Africa. The Johannesburg Stock Exchange (JSE) plays a vital role in influencing mortgage finance growth. Mortgage originators and banks in South Africa securitize mortgage loans and issue MBS on the JSE. This allows them to obtain

liquidity by selling these securities to investors. In Nigeria, mortgage finance market growth is majorly impacted by the activities in the primary markets including the Nigerian Stock Exchange (NSE) (Ogbenjuwa et al., 2020).

It can be deduced from the foregoing, that the observed growth of the mortgage finance market is associated with sources of funding from financial markets through providing liquidity at favorable interest rates shaping investor sentiment. In Kenya however, although financing for mortgages loan growth remains strong since 2016 and continues to grow continuously at 14% yearly, the total number of loans is still relatively small. Even with the recorded growth, the five largest lenders account for more than 80% of the whole mortgages portfolio, reflecting the industry's concentration. Additionally, with only 15,049 loans, the lending market is still considered modest by worldwide measures (Wandera, 2021). It remains unexplored in the Kenyan body of knowledge, how financial markets affect mortgage finance market growth; and the role played by interest rates in the mortgage uptake, hence the present study.

1.1 Financial Markets

Financial markets refer to markets for financial goods, buyers and sellers of securities, bonds, currencies, equity and derivatives are traded at low transaction costs (Wright & Quadrini, 2012). Through the financial market, long term finance is raised through trading in securities and other financial assets. This market allows for the buying and selling of financial instruments. Transfers of money from individuals or businesses without investment prospects are made easier by market mechanisms. For businesses to raise significant sums of capital, these markets for finance establish an open and tightly controlled framework (Mishkin, 2012). The requirements of both creditors and borrowers are met by a network of well-established financial systems and markets in addition to a wide range of instruments and financial products, which benefits the economic system as a whole.

Financial markets draw money from shareholders and then transfer it to businesses, permitting the latter to support their businesses and experience expansion. There are two basic sources of funds used by the financial markets which are; drawings and mobilization of deposits from the Housing Finance Company Limited (Central Bank of Kenya, 2016). Drawings from the Housing Finance Company Limited involves application for the loan directly from the Housing Finance Company Limited whereas raising funds through deposit mobilization from the public may include General or Personal savings account and house ownership savings accounts among others (Ezimuo, Onyejiaka & Emoh, 2014).

The growth of financial markets is determined by enhancements to the banking method's size, operation, effectiveness, and sustainability. An efficient financial market without necessarily serving as the channels for capital-augmentation funds for firms, they can indirectly promote aggregate development by enabling diversifying risks, improving information transmission, and increasing savings (Aghion, Howitt & Levine, 2018).

The components of financial market include the equity market, derivative markets, money markets, bond market, investment funds and some other non-depository markets like mutual funds, insurance companies, pension funds among others (Wait *et al,* 2017). Others includes Real Estate Investment Trusts markets and private credit fund market. According to Flanagan, (2018), private credit fund aims to own a privately held "lock-up" fund partnering arrangement including better yielding business, tangible, or financial holdings. Corporate or stock exposure to credit are both possible. Prior to the economic downturn, personal loan funds quickly gained recognition, but between 2009 and 2012, collecting activity dramatically

decreased (Munday, 2018). More recently, private credit funds have raised capital commitments on par with the 2008 peak and have consolidated their position as a standalone asset class.

The bond constitutes one of the fundamental and most significant elements of the financial markets, and it has a substantial impact on the expansion of the international and Kenyan mortgage industries. "Bond market," as it is mostly known, refers to all dealings and provisions of the instruments of debt, is frequently interchangeably used with the terms in the financial market like "debt market," "fixed-income market," or "credit market" in the financial market as highlighted by Cestau et al. (2019). The bond market has effects on the mortgage finance markets growth in any country and this is the base for the research. When the bond prices drop, the effect will be felt on the mortgage rates where the interest rates are expected to rise (Sbragia, 2019). When the same happens, a positive effect can be realized on the estate investment and this is bound to help in the expansion of investment in any country around the globe. In the present study, the bond ratio measure will be used to quantify the bond market activity, which is computed by dividing the value of debts payable within a year by the sum of the value of the equity stake and the value of securities due in the previous year.

Equity market is the second component of financial market where long-term financial securities are traded in the trading market, which includes common stocks, long-term debt securities which includes debt instruments, unrestricted borrowing stock, and convertible debt instruments (Kibet, 2015). According to Wang, Meric, Liu, and Meric (2009), the main role the equity market plays in any financial market is vital since it is helpful in trade promotion between surplus units of funds referred to as (investors) and deficit units of fund referred to as (stock issuers). Companies could get the money they need via the stock market, allowing them to increase productivity and expand their operations. Investors may benefit from dividends and capital gains from stock market investments.

Real Estate Investment Trusts popularly known as REITs is another component of financial market which is very critical when development of the real estates is looked into. These are regulated investment vehicles which are used to enable collective investment in real estates. Under REITS, the investors are expected to combining their resources and making investments in annuities with the goal of making money or making incomes from real estates and thus they become beneficiaries of the trust. REITs are considered safe for investors because they add diversification with higher total returns gained from lower overall risk (Escobari & Jafarinejad, 2016). Meaning that any investor in REITs has a lower overall risk as compared to investments in other financial markets. Real estate investment trust has effects on mortgage growth in Kenya and other countries around the world and its effects in Kenya is the center of this investigation. In the present study, REITS performance was measured by Log of Funds from operations (FFO), which is obtained by summing up net Income and depreciation and Amortization and subtracting Gains/Losses from the sale of real estate, plus impairment of real estate minus non-controlling interests' share of FFO.

The private credit fund market. This is a privately negotiated investment between the investor and the company issuing the credit. This kind of market usually comprise of potential high yields and illiquid opportunities across a range of risks or return profile. It is important to note these credits are not traded on the public markets. Private credit fund markets have been on the rise on the last decade and this can be attributed to the fact that the public markets are not giving returns as they used to do over the past years of financial marketing in most countries around the world (Claessens et al., 2018). The strategies that have been used in the private credit

fund market are more of the strategies in the marketplace for bonds and the success of this financial market component is based on the strategies that they use while conducting their operation with the main aim being raising higher returns for the investors. With the high level for growth of private credit funding, there are higher chances that it must in one way or the other affect mortgage growth in any country around the world. In Kenya, private credit fund market has grown beyond what people can imagine and the growth seen in this component of the financial market means that the mortgage market growth must also be affected by this finance capital (Cecchetti & Kharroubi, 2012). To measure private credit fund market performance, the Log of Assets Under Management (AUM) was used, which was obtained by calculating the total value of assets managed by the fund (including stocks, bonds and other securities)

1.2 Growth of Mortgage Market

The expansion as well as the advancement of the industry are referred to as the mortgage sector's growth for mortgage loans, which are loans specifically used for financing real estate purchases (Xu & Chen, 2021). It encompasses an increase in the volume of mortgage lending, the availability of mortgage products, the number of mortgage originators, and the overall size and depth of the market. Measures of mortgage market growth in the country can include the Housing Finance Index, mortgage origination volume, mortgage interest rates, mortgage delinquency and foreclosure rates, mortgage affordability, homeownership rates and market size and penetration (Mauck & Price, 2022).

The Housing Finance Index is a measure that provides insights into the growth and development of the mortgage finance market. It is designed to assess the overall health and activity level within the housing finance sector. The index combines various indicators and data points related to mortgage lending and housing market dynamics to create a comprehensive measure of the mortgage finance market growth. Growth in the mortgage market can also be assessed by the level of credit availability.

The mortgage market growth can further be linked to changes in homeownership rates. A rise in homeownership rates suggests increased demand for mortgage loans and a growing number of individuals acquiring property. It reflects the impact of the mortgage market on expanding homeownership and fostering housing stability (Diaz & Jerez, 2022). Mortgage origination volume entails the total value of new mortgage loans originated within a specific time period (Guerrieri & Uhlig, 2022). This metric reflects the level of mortgage lending activity and indicates the demand for mortgage financing. Increasing origination volume suggests a growing market and heightened borrower demand (Gilbukh & Goldsmith-Pinkham, 2019).

In this study, mortgage origination volume was used in the research to measure mortgage market growth, as indicated by the total mortgage loan portfolio per financial institution. Market Size represents the total value of outstanding mortgage loans within an economy. This measure reflects the accumulated mortgage debt and the overall maturity of the market. Mortgage market penetration, however, compares the mortgage market size to the total value of the real estate market. Higher market penetration indicates a more developed mortgage market (Favilukis et al., 2022).

1.3 Central Bank Interest Rates

The central bank rate is the interest rate applied to loans made by the central banking system to financial institutions (CBK, 2021). A review of literature identifies key ways through which growth of the mortgage finance market from funds advanced from financial markets is

influenced by interest rates. These include mortgage affordability, credit availability, refinancing activity, investor demand for MBS and housing market dynamics (Berger & Schmidt, 2019).

In terms of mortgage affordability, interest rates directly impact the affordability of mortgages. With low interest rates, borrowers can obtain mortgages at lower costs, resulting in increased affordability (Guerrieri & Uhlig, 2022). This stimulates demand for mortgages and supports mortgage finance growth. Consequently, with an increase in the rates of interest, the costs of borrowing are expected to rise, thus decreasing the affordability and dampening mortgage demand.Changes in interest rates also impact refinancing activity (Mauck & Price, 2022). When interest rates decline, existing borrowers may refinance their home loans to benefit from lower interest rates, reducing their monthly payments and potentially freeing up disposable income. Increased refinancing activity can lead to more liquidity in the mortgage market and support mortgage finance growth. Conversely, when interest rates rise, refinancing activity may decline, affecting market liquidity and slowing mortgage finance growth (Sarra & Wade, 2020).

Interest rates also influence overall housing market dynamics, which, in turn, impact the mortgage finance market (Kissi et al., 2021). When interest rates are low, it can stimulate housing demand, leading to increased home purchases and mortgage lending activity. This can drive mortgage finance growth. Conversely, higher interest rates may cool housing demand, potentially slowing down mortgage lending and mortgage finance market growth. Against this backdrop, Central Bank interest rate will be measured in this study, by CBK rate movement.

1.4 Mortgage Finance Market in Kenya

Kenya as a country found in the East African Community is known to have the highest population density in the area and has the largest economy. Additionally, it boasts the distinction of being the EAC's second-largest region. Kenya's GDP in 2021 was Ksh12.098 trillion, or $102.6 billion, and the economy of the country grew by 7.5% (Owino, 2022) Kenya had 38 financial institutions as of December 2021, 32 of which provided home mortgages. There were Ksh245.1 billion ($2.08 billion) worth of residential loans for mortgages, and of these, 11.6% were loans that were failing. In September 2022, the monetary policy panel increased the central bank's interest rate from 7.5% to 8.25%. Via Treasury bills and securities, the national treasury of the country also provides government assets which are free from any kinds of risks (Wandera, 2021).

The biggest issues preventing low-income Kenyans from obtaining affordable homes are the prohibitive prices of development-class land and construction. Kiserian's land costs Ksh9.8 million (US$83,149) per acre, whereas Ngong's property costs Ksh27.1 million per acre. Service charges included, a one-bedroom apartment in Ngara/Pangani rents for Ksh25,000 (US$212) per month (Hass Consult Real Estate, 2022). The expense of land has increased in Nairobi and the neighboring areas as a result of ongoing gentrification, making it more difficult to build cheap housing.

Kenya continues to see an increase in utilization of financial services. In 2021, 83.7% of people had access to formal financing, up from 82.9% in 2019 (Soar et al., 2022). Technology use, as well as more stringent regulations and safety measures in the banking industry, are the main factors driving this. Nevertheless, there is room for further monetary inclusion because just 11.6% of Kenya's adult population has access to any financial services.

In September 2022, the committee responsible for monetary policy increased the Central Bank Rates from 7.5% to 8.25%. In June 2022, the loan rate for commercial banks was 12.27%. As of

the end of the year 2021, Kenya had 38 banking institutions, 32 of which provided mortgages for houses. There were 26 783 mortgage accounts, with a median loan amount of Ksh9.2 million (US$78 058) (Hass Consult Real Estate, 2022). There were Ksh245.1 billion ($2.08 billion) worth of domestic mortgage loans, and of these, 11.6% were loans that were failing. The average loan length in 2021 was 12 years, the average rate of interest was 11.3%, and the typical Loan to Value (LTV) proportion remained under 90%. As of the end of the year 2021, deposits from clients made up Ksh4 451.7 billion (US$37.77 billion), the majority of the institutions' financing. (CBK, 2022).

1.5 Statement of Problem

The Kenyan mortgage finance by worldwide standards, the market is quite small, offering just 15,049 loans (CBK, 2022). With regard to mortgage loan as a share of GDP, Kenya is low at a paltry 62.6% as the year 2022, in contrast to such developed countries as the US (1687.6%), Canada (717.6%), Germany (642.5%) and France 589.1%. The statistic is also notably low even compared to its peer emerging economies in Sub-Saharan Africa, with South Africa at 539.3%; and within East Africa, with Tanzania at 252.1% and Uganda at 421.6%. The Kenyan mortgage finance market growth is further recording an unstable trend, with house prices contracting as indicated by the Kenya Bankers Association-House Price Index (KBAHPI).

Big financial institutions monopolize Kenya's mortgages market, which indicates high entry hurdles or risk for medium-sized and smaller lenders (CBK, 2020). Only nine banks (6 major, 2 medium-sized, and a single smaller bank) maintain a mortgage collection that exceeds Kshs. 1 billion every year, and the largest two banks control more than 50% of the mortgage industry's share. The rest of mortgage loans are distributed across smaller banks and Savings and Credit Cooperative Society (SACCOs). This is of the implication that despite the presence of SACCOs and banks being a source of funds for developing houses, the nation's expanding mortgage banking sector is still poor, based on the foregoing statistics. This brings to focus the function of financial markets in the growth of Kenya's mortgage market industry.

Across literature, financial markets at favorable interest rates are touted as contributing to mortgage finance market growth through among others, provision of liquidity and positively shaping investor sentiment in the housing sector. However, there is still little research on it in this repository of literature in Kenya how financial markets influence growth of the nation's mortgage industry; and the interest rates roles as provided by the Central Bank thereof, hence the present study. Whereas a number of related studies have been done in the country, the focus has largely been on the mortgage market in relation to variables other than financial markets. For instance, Owuor (2017) studied Although Chabayanzara (2017) looked at the link between Kenya's banking sector growth and its economy, the former study focused on the connection between economic circumstances and the expansion of the market for mortgages in Kenya. Macharia and Wanyoike investigated the drivers of mortgage acceptance from banking chains in Nakuru Town, Kenya, while Kinuthia (2017) evaluated some of the issues impacting the expansion of the mortgage industry in Kenya. The information presented above indicates that there is insufficient information regarding the connection between the financial market and the expansion of the mortgage market in Kenya; thus, the current study.

1.6 Research Objectives

The general objective of the study was to determine the relationship between financial markets, Central Bank interest rate and growth of mortgage market in Kenya. The specific objectives of the study were: to assess the effect of bond market on growth of mortgage market ; to evaluate the effect of equity market on growth of mortgage market; to examine the effect of real estate investment trusts market on growth of mortgage market; to analyze the effect of private credit fund market on growth of mortgage market; and to examine the moderating effect of interest rate on the relationship between financial markets and growth of mortgage.

1.7 Research Hypotheses

This study tested the following null hypotheses;

H_{01}: Bond market has no significant effect on the growth of mortgage market in Kenya

H_{02}: Equity market has no significant effect on the growth of mortgage market in Kenya

H_{03}: Real estate investment trusts market has no significant effect on the growth of mortgage market in Kenya

H_{04}: Private credit fund market has no significant effect on the growth of mortgage market in Kenya

H_{05}: Central Bank interest rate has no significant moderating effect on the relationship between financial markets and mortgage finance market growth among mortgage institution in Kenya

2.0   LITERATURE REVIEW

2.1 Theoretical Reviews

The following theories served as the foundation for the current research's scientific review that relating the financial markets to mortgage finance market growth. The under consideration includes the capital market theory, arbitrage pricing theory, financial intermediation theory and agency theory.

Capital Market Theory, also known as Modern Portfolio Theory (MPT) was proposed by Markowitz (1952). The model it uses to build portfolios of investments is to balance the risks and rewards in the best possible way. The theory states that an investor should not only consider the expected returns of individual assets but also take into account the correlation between different assets when constructing a portfolio. According to Markowitz (1952), investors can create a more effective portfolio that optimizes returns for an appropriate amount of risk or eliminates risk for an appropriate rate of yield by spreading their financial assets across multiple asset classes with variable levels of risk. The goal of capital market concept is to precisely define and anticipate the growth and expansion of the financial markets. Capital market theory is built on some assumption. The theory makes several key assumptions, including that shareholders will only consider risk-return calculations, that purchases and sales can be made in endlessly dividing units, that shareholders may dispose of an unlimited number of contributes simple terms, that there exists no rivalry, and that no shareholder may affect rates without imposing costs related to transactions. There are two important limitations to the Capital Market Theory that researchers should always consider while making decisions to use this theory in their research to improve the financial market. The first limitation which is a major drawback to the theory is that it is difficult to determine the beta in the calculation model being used. The mode of return calculation requires the investor to determine an investment's beta worth, which represents the investment. The second limitation is that the assumptions made while using the theory are mostly unrealistic making it difficult for investors to make diversifications in a planned manner (Lai & Stohs,

2015). According to Nawrocki (1997), the application of capital market concepts is crucial while making financial decisions as they deal with the effects of investor decisions on security prices. The theory therefore guided the dependent variable, growth of mortgage market in Kenya.

The theory of agency was initiated by Jensen and Meckling (1970) to clarify and address problems in the interaction between owners of companies and their representatives. In the words of Kitsou (2013), the family business started to decline in the course of the 20th century. The distinction between personal wealth and business holdings can occasionally become hazy as a result of the multifaceted nature of management and the emergence of capital that come with growing business size. To manage the daily operations of the company, qualified staff must be hired. According to agency theory, this resulted in agency relationships. According to Hirst and Bebchuk (2019), agency theory is built on potential issues that could arise between the two groups. The debt instrument proprietors and those making deposits who contribute their money for use in borrowing out are considered the principals in the framework of the stock market. Lending is actually one of the key streams for revenue for financial institutions, making it the main area of company operations supervisors should concentrate on. It is very possible that administrators will make judgments that result in significant losses if they are driven to behave in the best interests of themselves for whatever reason, which could result in agency issues (Voorn et al., 2019). The motives of those who use agency theory to increase their investment returns constitute another of its fundamental limitations. According to Ombwori (2012), the theory is understood to assume that people are always spontaneous, with their constant goal being to optimize their own advantage. As a result, there is never any assurance that the employees hired by the values are going to act in their greatest advantage. In the world of finance, where investors can issue additional debt in the primary trading of bonds or purchase and sell debt obligations in the supplementary market, the concept of agency is utilized. In the process of trading of bonds, the agency problem arises as the bond seller becomes the principal while the buyer become the agent. For the principal to sell the bond, he must be assured that there will be maximum and guaranteed returns by the agent. Otherwise, the seller of the bond may decide to keep his investment, denying the bond market much needed funds for lending to other investors. The theory guides the first objective of the research, to determine the relationship between bond markets and growth of mortgage market in Kenya.

Arbitrage pricing theory was first put forth by economist Stephen Ross in 1976, is a complex framework for price regulation that connects numerous components of risks in macro-economic to the selling price of financial assets. The principle of one the cost, which states that shrewd investors would engage in arbitrage inside a neutral market such that the optimal price is finally realized, is the foundation from which Ross (1976) built APT. Since each factor's sensitivity can be expressed through a loading factor or factor-specific beta coefficient, APT contends that when chances for arbitrage have been utilized in a highlighted time duration, the anticipated profit of an asset is an inverse function of multiple variables or mathematical market indexes. As a result, it gives traders a hint as to the "true" worth of an asset and makes it possible to use arbitrage to take advantage of market anomalies. However, there are three main assumptions which have been used in building the Arbitrage Pricing Theory. The assumptions are that the asset returns are explained by systematic factors, the investors have the ability of building a portfolio of assets only in a place where specific risks affecting the investment has been eliminated and the elimination is done through diversification. The third assumption is that there is no opportunity that exist for arbitrage among the well-diversified portfolios (Beyhaghi & Hawley, 2013). Because it considers a constant value to represent a risk-free return, the APT

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model contains a flaw (Brahmasrene and Jiranyakul, 2009). Other APT presumptions include: faultless financial systems; an unlimited number of instruments; competitive markets with constrained opportunities for arbitrage; risk variables suggestive of systematic hazards that are unable to be dispersed away and consequently affect every kind of asset to a certain extent (Basu & Chawla, 2012).Despite the disadvantages listed above, various research has shown that returns on stock markets and core economic activities are related in industrialized nations (Fama, 1990). The initial theory of arbitrage pricing puts the connection among indexes of stocks and socioeconomic indices utilizing an appropriate approach for testing. There are factors that are universal to all particular stocks. Macroeconomic factors like fluctuations in the rate of interest, the supply of cash, expansion of the economy, and hyperinflation can have an impact on the market indexes. This theory therefore guides objective two; to discover the connection between equity market and growth of mortgage market in Kenya.

Gurley and Shaw (1960) created financial Intermediation Theory in the 1960s, and it depends on the notion of agency and the information asymmetries principle. The notion of financial intermediaries is based on costs associated with transactions and asymmetric knowledge, claim Allen and Santomero (1997). They are intended for organizations that take deposits, write insurance contracts, and distribute money to businesses. Intermediation has grown even though the expenses for transactions and information asymmetry have decreased. This hypothesis is predicated on the idea that middlemen help to lower transaction costs and data gaps. Therefore, when there are technologies advancements, liberalization, and a strengthening of the market for securities, the costs of transactions will definitely reduce as well as informational asymmetries leading to a no more usage of financial intermediation theory thus it becomes useless (Scholtens & Van Wensveen, 2003). The Financial Intermediation Theory has just one major limitation which has been a setback to researchers and students while using the theory. The biggest limitation is that the theory has always failed to acknowledge the role of borrowers in managing risk in the financial transaction (Scholtens & Van Wensveen, 2000). According to Siklos (2001), financial companies use a range of securities, equity, or combination stake-holding arrangements to redistribute potentially uninvested cash to profitable firms. As a result, financial service providers transfer money from savers with excess cash to investors who need liquid money to invest. A middle-man organization, such a bank, receives money from the financier in the shape of a mortgage or loan, which is then given to the borrowers (Institute for Policy Studies, 2013). Financial brokers in the contexts of finance and economic growth typically refer to mediators from the financial industry, including banks, investment companies, investment vehicles, leasing firms, insurers and retirement savings accounts, and suppliers of microcredit. This common market-based hypothesis has historically been criticized for requiring an enormous amount of securities to own, barring exceptional circumstances. Purchases are frequently made indirectly via financial intermediaries including insurance firms, banks, and pension funds (Thorp, 2010). To make substantial investments, they can combine the monies that they get from numerous separate end buyers into funds like investment corporations and unit trusts, among others. Through the investment fund, investors combine funds from numerous individuals to buy securities. These pooled funds are borrowed other investors inform of mortgage; thus investment funds provide the much needed finance to the mortgage finance market leading to development of finance market. The theory therefore guided the objective three, to assess the relationship between Real Estate Investment Trusts Market and growth of mortgage finance market in Kenya.

2.3 Empirical Reviews

Muigai (2022) studied the impact of residential property investment oversight on the liquidity of Nairobi County's investment companies in Kenya. It specifically looked at how the administration of real estate mutual fund investments, investment trusts of real estate, and real estate commercial bonds affected the financial health of different institutions in Kenya's Nairobi County. The research design for this study was descriptive. 22 investment firms in Nairobi, Kenya, were targeted as the population, and 657 people responded. It was discovered that the bank's investments officers lacked a comprehensive understanding of residential equity funds and their operation, and that there had been insufficient protocols established for making sure that commission distributions to various participating parties were provided by investment banks in a timely manner. However, this study's main focus was on investment banks' financial performance. This is conceptualized differently from growth of mortgage finance market, presenting a conceptual gap. The focus was also investment banks, which presents a contextual gap as the present study focuses on mortgage finance institutions.

Anis (2021) studied the link among Egypt's bond exchange and the economy's expansion during 2005 to 2019 across a period of fifteen years. The association involving the rate at which GDP grows, employed as a stand-in for economic expansion, and the bond the marketplace, which is a financial inconsistent was described using the Vector Autoregressive (VAR) model. The analysis's findings indicate no statistically significant connection between the inflation rates and the price of bonds as expressed through the Treasury securities. Though this study by Anis (2021) gives some light on the impacts that bond market has on mortgage finance market growth. Using the VAR model, this study left an approach hole. The present research uses a regression model made up of panel data to close the gap and establish the relationship between the two research variables.

Chiu et al. (2020) assessed how Mexican REITs prices were affected by covid-19. Employing secondary data and multiple regression analysis, it was found that REITs' revenue was drastically affected by COVID-19. This was brought on by a halt in motion and big crowds of individuals. As a result, by May 2020, 72.1 proportion of construction had decreased, which contributed to the 36.7 percent reduction in the REIT index. By June 2020, 4 REITs had an unfavorable index return of 19.5%. This investigation was however narrowly focused on the post-covid-19 period. This presents a partial view of the state of affairs, presenting a methodological gap. To address this gap, the present study sets out to cover a 10-year period so as to address both pre- and post-covid period.

Kiriga, Chacha and Omanyo (2020) explored how the ceiling on interest rates affected how different industries used credit as well as how private sector lending affected the growth of the economy. These implications were evaluated using the cointegration method using the HP filter and ARDL methodology. According to the analysis, there is an encouraging and significant long- and short-term association between Kenya's nominal GDP growth and its accessibility to private sector financing. Real GDP growth is approximately 0.25 times more sensitive to private sector lending, which is of statistical importance and noteworthy from an economic perspective. This connection shows that the reduction in private sector lending (of roughly 4.3% after interest rate restrictions were implemented) is tentatively connected to a reduction in actual growth in GDP to approximately 1.1% comparable to the pre-capping baseline. This research however associated private credit fund market with economic growth, which is conceptually different from growth of the mortgage finance market. This presents a conceptual gap. In the present

study, the gap is bridged by associating private credit fund market with growth of the mortgage finance market.

Alam and Hussein (2019) examined several regression models that equities market indexes have a statistically significant beneficial impact on Oman's GDP. The researchers attributed this to the Muscat Security Market's (MSM) modest size and found that market capitalization, as opposed to the value of traded equities, has a higher impact on economic growth. The researchers also note that the consequences of the worldwide financial meltdown, which started in 2007 in the US and could have altered its results, may be to blame for the weak link among the worth of traded equities and economic expansion. Alam et al.'s (2019) investigation was conducted in Omani Arabic, which left a situational gap. By conducting a regional investigation on the connections among the different stock markets and the expansion of mortgages in Kenya, the research therefore aims to reduce the existing disparity

3.0 RESEARCH METHODOLOGY

3.1 Research Philosophy
Philosophy of research gives researchers an option of using different approaches when conducting research study. This study was guided by Positivism philosophy which entails the implementation of notions and the use of massive sampling to ensure that become measurable (Saunders, Thornhill, and Lewis, 2012). According to, Wooldridge, (2012) Positivism philosophy is based on evidence that is empirically acquired and evaluated through both statistical and qualitative approaches.

3.2 Research Design

An explanatory research design was used in the present study. When an issue has not been correctly detected or there is insufficient information available, explanatory research are undertaken (Saunders et al., 2007). Research into the issue aim to provide answers to the "why" and "how" issues (Grey, 2014). Explanation research concentrates on elucidating this study's components. The explanation does not provide definitive proof but rather aids in an improved comprehension of the issue.

3.3 Empirical Model
Correlation and regression statistical models will be used in the research. To understand the following model is going to be used to examine the impact of the variables that are not correlated on the factors that are dependent.

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.1)$$

Where: Y_{it} is growth of mortgage for firm i at time t;

i is a firm, i = 1…50

t is the time period, t = Q1,2012… Q4,2022

X_{it} is predictor variable vector

β is beta coefficients

α is a constant term

ε_{it} is the error term.

Equation 3.1 is expanded to obtain equations 3.2 which is used for estimation.

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.2)$$

Where;

Y_{it} = Growth of Mortgage of firm i at time t;

X_{1it} = Bond Market of firm i at time t;

X_{2it} = Equity Market of firm i at time t;

X_{3it} = Real Estate Investment Trusts Market of firm i at time t;

X_{4it} = Private Credit Fund Market of firm i at time t;

α = The constant term

β_1-β_4 = The coefficients for the various independent variables

Subscript i = Firms (cross-section dimensions) ranging from 1 to 11;

Subscript t = Quarterly Data (time-series dimensions) ranging from 2016 to 2021;

ε_{it} = error term.

To test the moderating effect of interest rate, equation 3.2 was enlarged to produce formulas 3.3.

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_2 S_{it} + \beta_3 X_* S_{it} + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.3)$$

X_{it} is predictor variable vector for firm i in time t
S_{it} is the interest rate for firm i in time t
$X_* S_{it}$ is the interaction term of financial markets and growth of mortgage market for firm i in time t.

4.0 RESULTS AND DISCUSSIONS

4.1 Descriptive Statistics

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Bond market (%)	160	.00	5.94	1.5929	1.32990
Equity market (Kshs)	160	-318.00	554.00	17.9256	78.29148
REITs market (Billions)	160	.00	129.42	4.9512	20.04145
Private credit market (Billions)	160	-.01	326.48	36.4266	59.22342
Interest rate (%)	160	7.00	9.33	8.0200	.94419
Mortgage growth (Billions)	160	-6.62	202.46	13.3675	29.06374

Source: Researcher (2023)
In the table 4.1, a mean bond ratio of 1.59% was recorded, at a minimum of 0.00% and a maximum of 5.94% with a standard deviation of 1.33. A mean EPS of Kshs17.93 was then established, with the lowest at Kshs-318.00 and highest of 554.00. A mean of Kssh4.95 billion in FFO was recorded, at a minimum of Kshs0 billion and a maximum of Ksh129.42 billion. A mean asset value of Kshs36.43 billion, with a minimum of Kshs-10 million and a maximum of Kshs326.48 billion. A mean interest rate of 8.02 was further recorded with the lowest at 7.0% and the highest at 9.33%. Results further indicate a mean mortgage portfolio of Kshs13.37 billion, with the minimum at -6.62 billion and a maximum of Kshs202.46 billion.

4.2 Correlation Analysis

Table 4.2: Pearson Correlation Matrix

		Mortgage	Bond	Equity	REITs	Private	CBR
Mortgage	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	160					
Bond	Pearson Correlation	.000	1				
	Sig. (2-tailed)	.995					
	N	160	160				
Equity	Pearson Correlation	.013	-.001	1			
	Sig. (2-tailed)	.875	.985				
	N	160	160	160			
REITs	Pearson Correlation	.192*	-.078	-.036	1		
	Sig. (2-tailed)	.015	.325	.649			
	N	160	160	160	160		
Private	Pearson Correlation	.618**	.103	.045	.528**	1	
	Sig. (2-tailed)	.000	.196	.573	.000		
	N	160	160	160	160	160	
CBR	Pearson Correlation	-.057	-.082	-.024	-.025	-.079	1
	Sig. (2-tailed)	.476	.305	.763	.752	.319	

| N | | 160 | 160 | 160 | 160 | 160 | 160 |

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher (2023)

In the table 4.2 the study found an average, favorable, substantial correlation between Private Credit Market and mortgage growth (r =.618; Sig. = .000<.01). A weak, positive and significant correlation was then established between REITS market and mortgage growth (r =.192; Sig. = .015<.05). Weak, positive and non-significant correlations were also recorded between bond market and mortgage growth (r =.000; Sig. = .995>.05); between equity market and mortgage growth (r =.013; Sig. = .875>.05); while a weak, negative and non-significant correlation was found between CBR and mortgage growth (r = -.057; sig. = .476>.05).

4.3 Regression Analysis

4.3.1 Bond Markets and Growth of Mortgage Market

The aim of the research was to ascertain the effects of bond market on mortgage market growth in Kenya. A simple linear regression analysis was thus conducted, modelling bond market and mortgage market growth. Three results were produced: the model fitting brief, ANOVA, and the calculated model fit table as displayed in Table 4.3

Table 4.3: Model Summary for Bond Markets

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.000[a]	.000	-.006	29.15557

a. Predictors: (Constant), Bond Market

Source: Research Data (2023)

The generated result in Table 4.3 indicated a 0.000 correlation value (R), modeling a weak linear connection between bond market and the growth of mortgage market. An R^2 value of 0.000001was also seen, indicating that bond market accounts for only 0.0001% of the mortgage market growth and the remaining 99.999% is accredited to more characteristics that the predictive model used in this study did not consider. An ANOVA test was also conducted as highlighted in the multivariate equation in Table 4.4.

Table 4.4: ANOVA for Bond and Private Credit Fund Markets

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.030	1	.030	.000	.995[b]
	Residual	134307.435	158	850.047		
	Total	134307.465	159			

a. Dependent Variable: Mortgage

b. Predictors: (Constant), Bond

Source: Research Data (2023)

The analysis of ANOVA results as indicated in Table 4.4 indicate that the regression technique employed in the study was not statistically significant (F = .000, Sig. > 0.05). The analyzed results show that, based on the total sum of squares (134307.465), regression squares were .030. This suggests that the model of regression accounts for only approximately 0.0001% of the variability in the dataset. The remaining sum of squares is 134307.435, implying that 99.999% of the variance in the dataset cannot be explained. Additionally, a table of regression values resulting from the regression analysis is provided in Table 4.5

Table 4.5: Coefficients for Bond and Private Credit Fund Markets

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	13.384	3.603		3.714	.000
	Bond	-.010	1.739	.000	-.006	.995

a. Dependent Variable: Mortgage
Source: Research Data (2023)

The estimated effect of every variable that predicts the mortgage market expansion is displayed in Table 4.5 after statistically adjusting for the remaining predictive factors. The coefficient of regression of .000 (Sig.= .995>.05) in bond market means that for every change of 1% in the bond market, there was a correlated change of 0.0001% in the mortgage market growth, when all other factors are kept constant. However, this was a non-significant, implying that bond market makes little to no difference in the mortgage market growth in Kenya. As such, the research does not reject the first null hypothesis of the research stating that bond market has no significant effect on the growth of mortgage market in Kenya (H_{01}).

4.3.2 Equity Markets and Growth of Mortgage Market in Kenya
This study investigated the effect of equity market on growth of mortgage market in Kenya. A simple linear regression analysis was thus conducted, modelling equity markets and growth of mortgage market. Three results were produced: the brief model fitting summary, ANOVA, and the computed model fit table. Table 4.7 provides a summary of the model's overall fit.

Table 4.6: Model Summary for Equity Markets

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.013[a]	.000	-.006	29.15327

a. Predictors: (Constant), Equity Market
Source: Research Data (2023)

The results in Table 4.6 indicate a 0.013 correlation value (R), showing a weak linear relationship between equity market and mortgage market growth. An R^2 value of .0002 was also observed, implying that equity markets account for 0.02% of the growth of mortgage market and the remaining 99.98% is ascribed to additional traits that the predictive model used in this study was not accounted for. An ANOVA test was also conducted as seen in Table 4.7 of multivariate equation.

Table 4.7: ANOVA for Equity Markets

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.196	1	21.196	.025	.875[b]
	Residual	134286.269	158	849.913		
	Total	134307.465	159			

a. Dependent Variable: Growth of Mortgage Market

b. Predictors: (Constant), Equity Market

Source: Research Data (2023)

The ANOVA analysis results, presented in Table 4.7, indicate that the regression framework employed in the study is not statistically significant (F = .025, Sig. > 0.05), suggesting a lack of significance in the linear model. Specifically, based on the total squared sum (134307.465), regression squares were found to be 21.196. This implies that the regression model accounts for only about 0.02% of the deviation in the data, while the remaining squares total 134286.269, indicating that 99.98% of the variance in the database remains unexplained. Additionally, Table 4.8 displays a set of regression values obtained through the regression evaluation.

Table 4.8: Coefficients for Equity Markets

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	13.284	2.365		5.617	.000
	Equity Market	.005	.030	.013	.158	.875

a. Dependent Variable: Growth of Mortgage Market

Source: Research Data (2023)

The estimated effect of every predictor factor on the expansion of the mortgage market is displayed in Table 4.8 after statistically adjusting for the remaining predictive factors. The coefficient of regression of .013 (Sig.= .875>.05) in equity market means that for every 1% change in equity markets, there is a correlated .013% (Sig.= .875>.05) change in the growth of mortgage market controlling for the other variables, albeit not statistically significant. The study thus fails to reject the subsequent null hypothesis, that equity market has no significant effect on the growth of mortgage market in Kenya (H_{02}).

4.3.3 Real Estate Investment Trusts and Growth of Mortgage Market in Kenya

The research pursued to analyze the impact of real estate investment trusts market on growth of mortgage market in Kenya. A simple linear regression analysis was thus conducted, modelling REITS and growth of mortgage market. Three results were tabulated: the model fitting brief, ANOVA, and the calculated model fit table. Table 4.9 displays an overview of how well the model fits.

Table 4.9: Model Summary for REITs

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.192[a]	.037	.031	28.61169

a. Predictors: (Constant), REITs Markets

Source: Research Data (2023)

The results in Table 4.9 indicates a 0.192 correlation value (R), modeling a moderate linear relationship between REITs market and mortgage market growth. An R^2 value of 0.037 was also observed, implying that REITs market account for 3.7% of the growth of mortgage market while the rest 96.3% is connected to additional features that were not considered during the analysis using the predictive model. The Multivariate equation presented in Table 4.10 shows a generated ANOVA test.

Table 4.10: ANOVA for REITs

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4964.075	1	4964.075	6.064	.015[b]
	Residual	129343.390	158	818.629		
	Total	134307.465	159			

a. Dependent Variable: Growth of Mortgage Market

b. Predictors: (Constant), REITs Markets

Source: Research Data (2023)

The ANOVA test results shown in Table 4.10 indicate that the regression framework in the study did not yield a significant outcome (F = 6.064, Sig. < 0.05), suggesting the absence of a significant linear model. The analysis reveals that based on the total squared sum (134307.465), the regression squares amounted to 4964.075. This implies that the regression model accounts for approximately 3.7% of variation in the research data, and the remaining squares total 4964.075, indicating that 96.3% of the variance in the research database remains without explanation. Additionally, the regression evaluation produced a table of regression values, which is detailed in Table 4.11.

Table 4.11: Coefficients for REITs

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.987	2.330		5.144	.000
	REITs Markets	.279	.113	.192	2.462	.015

a. Dependent Variable: Growth of Mortgage Market

Source: Research Data (2023)

The estimated impact of every predictor factor on the expansion of the mortgage market is displayed in Table 4.11 after statistically adjusting for the remaining predictive factors. The coefficient of regression of .192 (Sig.= .015<.05) in REITs market means that for every 1% change in REITs markets, there is a significant and correlated .019% (Sig.= .015<.05) change in the growth of mortgage market controlling for the other variables. This study thus rejects the third null hypothesis that states that real estate investment trusts market has no significant effect on the growth of mortgage market in Kenya (H_{03}).

4.3.4 Private Credit Fund Market and Mortgage Market Growth in Kenya

This research aimed to examine the effect of the private credit fund market on the expansion of the mortgage market in Kenya. The study employed a fundamental linear regression analysis, wherein the Private Credit Fund Market and mortgage market growth were modeled. Three key

outcomes were derived: a concise model fitting summary, ANOVA results, and a computed model fit table. Table 4.12 provides a summary of the model's overall fit.

Table 4.17: Model Summary for Private Credit Fund Markets

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.618[a]	.382	.378	22.91619

a. Predictors: (Constant), Private Credit Fund Market

Source: Research Data (2023)

The results presented in Table 4.12 shows a 0.618 correlation value (R), indicating a strong, linear relationship between private credit fund market and mortgage market growth. An R^2 value of .382 was also observed, implying that private credit fund market accounts for 38.2% of the growth of mortgage market and the rest 61.8% is ascribed to other factors that were not considered when running the above predictive model. The multivariate equation shown in Table 4.13 shows a generated ANOVA test results.

Table 4.13: ANOVA for Private Credit Fund Markets

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51333.519	1	51333.519	97.750	.000[b]
	Residual	82973.945	158	525.152		
	Total	134307.465	159			

a. Dependent Variable: Growth of Mortgage Market

b. Predictors: (Constant), Private Credit Fund Market

Source: Research Data (2023)

The ANOVA analysis results generated as indicated in Table 4.13 reveal the significant effectiveness of the regression technique employed in the study (F = 97.750, Sig. < 0.05). Specifically, based on the total squared sum (134307.465), the regression squares sum to 51333.519. This suggests that the regression model accounts for approximately 38.2% of the variance in the dataset. Meanwhile, the remaining squares amounts to 82973.945, indicating that 61.8% of the variance in the database remains unexplained. Additionally, a table of regression values resulting from the regression evaluation is provided in Table 4.14.

Table 4.14: Coefficients for Private Credit Fund Markets

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.316	2.129		1.088	.278
	Private Credit Fund Market	.303	.031	.618	9.887	.000

a. Dependent Variable: Growth of Mortgage Market

Source: Research Data (2023)

The estimated effect of every predictor factor on the expansion of the mortgage market is displayed in Table 4.14 after statistically adjusting for the remaining predictive factors. The

coefficient of regression of .618 (Sig.= .000<.05) in private credit fund markets means that for every 1% change in private credit fund markets, there was a correlated .618% change in mortgage market growth, when some of the factors are kept constant. This was statistically significant, indicating that private credit fund markets significantly influence mortgage market growth in Kenya. As such, this study rejects the fourth null hypothesis that states that private credit market has no significant effect on the growth of mortgage market in Kenya (H_{04}).

4.3.5 Financial Markets, Central Bank Interest Rate and Growth of Mortgage Market in Kenya

This study examined the moderating effect of the interest rates of the Central bank on the connection linking financial markets and growth of mortgage market in Kenya. To this end, a composite variable of financial markets was computed. Growth of mortgage market was then regressed against financial markets (model 1) and the interaction between interest rates and financial markets (model 2). Three results were shown: the model fitting brief, ANOVA, and the calculated model fit table. Table 4.15 shows a fitting model.

Table 4.15: Model Summary for Moderating effect

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.238[a]	.057	-.016	49.34817
2	.239[b]	.057	-.100	51.35985

a. Predictors: (Constant), Financial Markets
b. Predictors: (Constant), Financial Markets, Interaction
Source: Research Data (2023)

The analyzed data in Table 4.15 confirm a 0.238 correlation value (R) was observed in model 1, modeling a rather weak, linear connection between bond financial markets and mortgage market growth. An R^2 value of .057 was also observed, implying that financial markets account for 5.7% of the growth of mortgage market and the rest 94.3% is ascribed to more tests which were not considered when running the predictive model used in the test. Upon adding the interaction between financial markets and interest rates, a marginally higher correlation value of 0.239 was observed in model, also modeling a weak, linear connection between bond financial markets and mortgage market growth. A similar R^2 value of .057 was also observed, implying that the financial markets with the interaction account for 5.7% of the growth of mortgage market and the rest 94.3% is ascribed to other tests that were not considered when using the predictive model to analyze the data. The results for ANOVA test are also presented in the multivariate equation shown in Table 4.16.

Table 4.16: ANOVA for Moderation

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1905.431	1	1905.431	.782	.392[b]
	Residual	31658.140	13	2435.242		
	Total	33563.571	14			
2	Regression	1909.557	2	954.778	.362	.704[c]
	Residual	31654.014	12	2637.835		

Total	33563.571	14

a. Dependent Variable: Growth of Mortgage Market
b. Predictors: (Constant), financial Markets
c. Predictors: (Constant), Financial Markets, Interaction
Source: Research Data (2023)

The table 4.16 the results of the ANOVA analysis further confirm that financial markets account for 5.7% of the growth of mortgage market and the remaining 94.3% is ascribed to other factors that were not considered when analyzing the data using this predictive model. It also implies that financial markets with the interaction account for 5.7% of the growth of mortgage market and the other 94.3% is ascribed to other factors not considered in the predictive model during analysis. The evaluation of regression showed results as indicated in Table 4.17.

Table 4.17: Coefficients for Moderation

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	31.548	12.744		2.476	.028
	Financial Markets	5.185	5.862	.238	.885	.392
2	(Constant)	31.605	13.344		2.368	.035
	Financial Markets	3.143	51.999	.144	.060	.953
	Interaction	.255	6.448	.094	.040	.969

a. Dependent Variable: Growth of Mortgage Market
Source: Research Data (2023)

The estimated effect of every predictor factor on the expansion of the mortgage market is displayed in Table 4.17 after statistically adjusting for the remaining predictive factors. The coefficient of regression of (β = .238, Sig.= .392<.05) model 1 implies that for every 1% change in financial markets, there is a correlated .238% (Sig.= .392<.05) change in the growth of mortgage market controlling for the other variables, albeit non-significant. Results in model 2 further show that upon adding the interactor in the second model, financial markets were still non-significant (β = .144; Sig.= .953>.05). The interaction is however also not significant (β = .094; Sig.= .962 >.05), indicating a lack of significant moderation.

The finding implies that interest rate fails to substantially play an interactive role in the correlation between financial markets and mortgage market growth. On this account, this study fails to reject the fifth null hypothesis stating that central bank interest rate has no significant moderating effect on the connection between financial markets and mortgage finance market growth among mortgage institution in Kenya (H_{05}).

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1   Conclusions

The lack of a significant influence from the bond market on the mortgage market growth implies that the anticipated connection between these two financial sectors might not be as pronounced as initially anticipated. Possible factors contributing to this observation could encompass market segmentation, differing levels of market maturity, regulatory constraints, investor behavior, and broader economic dynamics. These findings highlight the need for a more nuanced understanding of the interplay between financial markets and underline the complexity of the factors influencing their interactions. Further research could delve deeper into the specific mechanisms underlying this relationship and explore potential avenues for fostering a more robust bond-market-to-mortgage-market linkage.

The finding that the equity market makes little to no difference in the mortgage market growth suggests that the dynamics between these two sectors might be influenced by a range of factors beyond the immediate scope of equity market performance. The divergent investor profiles, the influence of economic conditions, the presence of alternative investment options, and the regulatory landscape all play pivotal roles in shaping this relationship. These results underscore the multifaceted nature of financial market dynamics and emphasize the importance of considering a holistic array of influences when analyzing market interconnections. Future studies might further explore the specific driving factors and potential strategies for fostering stronger links between the equity and mortgage markets.

The research findings provide valuable insights into the relationship between REITs market and the growth of the mortgage market in Kenya. The evidence implies that stakeholders, including policymakers, investors, and financial institutions, should consider a holistic perspective when formulating strategies to enhance the mortgage market. While REITs play a vital role in real estate investment, their impact on mortgage market growth in the Kenyan context appears to be relatively limited. The study underscores the importance of considering multiple factors, such as economic conditions, regulatory frameworks, and local market dynamics, in understanding the mechanisms that drive mortgage market development. These findings not only contribute to the academic discourse on financial markets but also offer practical implications for those involved in shaping the financial landscape in Kenya.

To conclude, the analysis into the relationship between the private credit market and the growth of the mortgage market in Kenya illuminates the critical role that alternative financing sources can play in shaping financial landscapes. The significant influence of the private credit market on mortgage market growth underscores its capacity to bridge gaps left by traditional lending institutions. Factors such as flexibility in lending criteria, innovative product offerings, and adaptability to niche markets contribute to this observed influence. These findings highlight the potential benefits of a diverse lending ecosystem and accentuate the importance of regulatory frameworks that encourage the participation of private credit sources in the mortgage market. Further research could delve into strategies to further strengthen and sustain this influential link between private credit and mortgage market growth.

The examination of the moderating role of interest rates in various financial market relationships within Kenya provides nuanced insights into the multifaceted nature of market dynamics. The consistent finding that interest rates do not significantly moderate the relationships between the bond market, equity market, private credit market, and the growth of the mortgage market underscores the presence of intricate factors beyond interest rate fluctuations. These include market segmentation, investor behavior, regulatory influences, macroeconomic conditions, and long-term investment perspectives. These results emphasize the

need for a comprehensive understanding of financial ecosystems, where interest rates are just one component among many. Further research could delve deeper into these influencing factors to unravel the complexities that govern financial market interactions in the Kenyan context.

5.2   Recommendations

The study recommended that policy makers promote initiatives that encourage better integration and awareness between the bond market and mortgage market. This could involve educational campaigns to inform market participants about potential benefits and synergies, thus fostering a more integrated financial ecosystem. It is also important that policy markers review existing regulations to ensure they facilitate the interaction between various financial markets. Creating a regulatory framework that supports cross-market collaboration could enhance the ability of different financial sectors to influence each other positively. The study further recommends that policy markers develop policies that promote the growth of the private credit market, as its significant influence on mortgage market growth suggests its importance in bridging financing gaps. They should also foster an environment that encourages alternative investments, including REITs and private credit. Implement policies that attract investors to these sectors, promoting innovation and diversification within the financial ecosystem. The observed lack of interest rate moderation implies other economic factors have more substantial influence. Therefore, policies should focus on maintaining long-term economic stability, which can have a more substantial impact on financial markets.

Financial institutions should consider diversifying their offerings to include products that tap into the potential interactions between different markets. This might involve partnerships or collaborations with players in other financial sectors. They should also develop innovative mortgage products that cater to a wider range of borrower profiles. This could involve collaborating with private credit lenders to design flexible and tailored mortgage solutions. Financial institutions should tailor lending criteria to align with the dynamics of the private credit market and other alternative financing sources. This responsiveness can better serve borrowers who might not meet traditional banking standards. Investors and institutions should explore opportunities within the private credit market as a means to influence mortgage market growth. Leveraging the flexibility and innovation offered by private credit sources can fill gaps left by traditional lending channels. Investors in both equity and bond markets should adopt a long-term investment mindset, recognizing that fluctuation in short-term interest rate might not have a significant impact on market relationships.

Real estate developers, agents, and homebuyers should conduct thorough market research to understand the impact of different financial markets on mortgage growth. This understanding can guide investment decisions, timing, and negotiation strategies. Real estate developers and potential homebuyers should explore the opportunities presented by the private credit market. Engaging with private credit lenders can provide additional financing options that cater to unique needs and circumstances. Recognizing the complex nature of market interactions, real estate stakeholders should engage in long-term planning that considers a variety of economic and financial factors beyond short-term interest rate changes. The study finally recommends further studies to be done in the future to organizational and sectoral contexts other than mortgage finance institutions, with a view to determine if the results of this study have any similarities or differences.

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