International Research Journal Of Economics and Finance

Vol 3, Issue 3, pp 229-241, October 26, 2021, © International Research Journal Publishers,

ISSN 2710-2742 (online) www.irjp.org

INFLATION RATE, EXCHANGE RATE AND GROWTH OF MORTGAGE FINANCING AMONG COMMERCIAL BANKS IN KENYA

[1*]Chanzu Newton Luyali, [2]Dr. Bichanga Julius M. & [3]Dr. Gekara M

[1*] Scholar, Jomo Kenyatta University of Agriculture and Technology, Kenya
[2]Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya
[3]Lecturer, The East African University, Kenya

Accepted, October 26, 2021

ABSTRACT

Housing is a basic human right as enshrined under the social pillar in the Kenyan constitution. It is a fundamental right though difficult to attain. It requires large capital amounts; which is out of reach to many ordinary people. To obtain this, loan financing has approaches within which savings are raised. Mortgage loans have become necessary to commercial banks in Kenya. The goal of the study was to investigate the effects of inflation and exchange rates on the growth of mortgage financing among Commercial banks in Kenya. The study adopted a descriptive research design, where a census of the 35 mortgage loan lending commercial banks over a period between 1985 and 2019. Secondary data was used from desired financial statements available to the public of the singular commercial banks and other posted reports of financial institutions and establishments in conformity with the study. Time-series data were analyzed using STATA software, regression analysis and model specification tests. The study found that inflation rate and exchange rate have significant effects on the growth of mortgage financing among commercial banks in Kenya. The study recommends that Kenya's central bank should put in place mechanisms to guarantee that inflation and exchange rates do not have an adverse impact on bank mortgage financing. As a result, the study advises that the government guarantees currency stability since currency fluctuations may have a negative impact on commercial bank mortgage borrowing.

Keywords: *Inflation Rate, Exchange rate, Growth of Mortgage Financing*

INTRODUCTION

Mortgages are routinely used and are available for house financing in developed economies than developing and undeveloped economies. Countries with less income and developing middle-income countries register only a small fraction of their GDP as mortgage debt. As an example, in many lower-middle-income across Asia and Africa, only 1% or less of their GDP is outstanding total mortgage debt whereas in the Netherlands it is 83% of their GDP. Mortgage financing has gained recognition and is readily available in developed economies compared to developing economies (Hahm, 2014). This arises from challenges such as mismatch between the long-term nature of mortgages and the short-term nature of customer deposits in addition to high-interest rates charged on loans (Hassler, 2016).

The USA experienced housing sector recovery after the 2007 financial recess due to supportive government programs, increased refinancing activities and a regime that favored low-interest rates on loans (Sharma, 2017). Sharma gave the additional example of England where the Bank of England announced a further increase in secured loans to households by building societies and banks. This led to a further increase in demand for rental properties and mortgages.

On examining the Hong Kong housing market, mortgages that are produced as a result of pastime costs relate positively yet drastically in conformity with growth between mortgages loans. This is among the lengthy move that influences quick-term and lengthy period among loans pastime degree yet the savings in imitation of lie superior (Gerlach & Peng, 2015). Cost, presence then securitization regarding mortgages practice namely discriminating elements about potent personal loan borrowers (Loutskina & Strahan. 2017).

Moss (2016) found that in Ghana, the nation experienced political instability and economic decline which negatively affected the banking sector. The mortgage sector was also affected and there was reduced uptake of mortgage loans. Mohammed (2014) noted that the housing finance corporation in Ghana was not successful in addressing the issue of the housing shortage. On the other hand, Nigerian housing became more modernized but its progress was impeded by the high cost of land in the urban regions and inadequate real estate developers.

According to Ndungu (2017), Kenya mortgage services are available in banks as well as mortgage finance. The provision of mortgage loans is regulated by the state government. For instance, in 2002, the government stretched the mortgage loan payback period from 5 years to 11-26 years so that the facility could be affordable to a large number of citizens with varying specifications on housing. A report by World Bank in 2016 indicated that the Kenyan mortgage market is underdeveloped and it is only affordable by a specific class of citizens with huge incomes, the majority of who are public servants. Despite the demand for the same having been increasing, the uptake has not moved in the same direction leading to a slower pace of development and growth in the mortgage sector.

CBK, (2012) report revealed factors that slow down the development of mortgage financing. The findings among others reported that the credit risk, high-interest rate, disparities in property pricing and long-term access to funds were some of the factors. The report cited immense variance between the short-termed deposits and long-term mortgage loans as a hindrance to growth. The risk of defaulters was also singled out since the relevant bureaus fail to give reliable credit backgrounds. Mortgage lending institutions risk the unfavorable fluctuations in the rate interest by the Central Bank of Kenya which eventually affects the profitability of Banks. Hass Consult Survey (2013) in its survey established that the real estate market is characterized by uncertainties in prices that are set without professional intervention which in turn has an effect on repayment and the value of the credit. Consequently, the mortgage lending institutions set up a high-risk premium rendering the mortgage facility expensive.

Statement of the Problem

The banking industry is one of the sectors being used to facilitate the realization of vision 2030, to this end, there needs to ensure a provision of financial services and investment opportunities that will create an efficient, vibrant and globally competitive financial services environment in Kenya (ROK, 2017). In Kenya, the growth in mortgage financing has been poor despite Central Banks' interest rate capping. For instance, mortgage accounts holders in KCB bank which is the leading mortgage lender in Kenya went down to 6496 from 7007 in 2015, a decline of 7.3%. Housing Finance, the second-largest mortgage provider in the country, also saw a decline in its customers from 5,993 to 5,711 which was 4.7 % lower as compared to the same period. In 2017,

mortgage accounts for all the banks reduced from 24,458 in 2016 to 24,085 which was a reduction of 1.5% in the same period (CBK, 2017).

Various studies have been conducted in Kenya on mortgage financing. Jumbale (2016) sought to establish the relationship between the prices of houses and real estate financing. Muli (2016) on the other hand studied the relationship between prices of property and mortgage lending in Kenya. Leonard and Owiti (2013), when investigating the determinants of mortgage uptake, found out that the capital market negatively affected mortgage growth. A closely related study by Agao (2014) on the effect of macroeconomic drivers on mortgages within the Kenyan mortgage sector found a significant and negative association between mortgage uptake and inflation rates, and positive relationships with the rate of interest and the level of the money supply. This study, therefore, sought to establish if there are any linkages between inflation rate and exchange rate on the growth of mortgage financing among commercial banks in Kenya.

Objectives

- To determine the effect of inflation rate on the growth of mortgage financing among commercial banks in Kenya.
- To assess the effect of exchange rate on the growth of mortgage financing among commercial banks in Kenya.

Theoretical Review

Fisher's Theory

This theory was founded by Irving Fisher (1960) it explains the link that exists between inflation, real interest and nominal rates of interest. A country's or more countries' nominal rates of interest should be equal to the sum of needed actual return to the investors and caution the anticipated inflation amount per Nation (Dimand, 2003). According to Fama and Schwert (1977) with a perfect market, the stocks prices get adjusted in a way that expects nominal return from t-1 to t, which is the total sum of the appropriate equilibrium expected on real rate and the markets' assessment of expected inflation rate for the same period (Fama & Schwert, 1977).

According to the fisher effect theory, shares are used as hedges against inflation because they represent claims to real assets, which suggest a positive share price is correlated to the expected inflation (Demand, 2003). Real money is made less valuable in the future by inflation and it is

factored that is put into consideration when determining the nominal interest rate. Thus; nominal rate = real rate + inflation rate. This theory was deemed viable to this study as it addresses the inflation variable where it was measured using compensation for work done, inflation rate is influenced by demand-pull and cost-push of goods and services within an economy. The theory is linked to the inflation rate variable.

Purchasing Power Parity Theory

Purchasing Power Parity (PPP) is a theory of exchange rate determination and a way to compare the average costs of goods and services between countries. The theory was developed in its modern form by Gustav Cassel in 1918. The theory assumes that the actions of importers and exporters (motivated by cross-country price differences) induce changes in the spot exchange rate. In another vein, PPP suggests that transactions on a country's current account affect the value of the exchange rate on the foreign exchange (Forex) market. This is in contrast with the interest rate parity theory, which assumes that the actions of investors (whose transactions are recorded on the capital account) induce changes in the exchange rate. PPP theory is based on an extension and variation of the ―law of one price as applied to the aggregate economy (Devereux & Engel, 2016).

To explain this theory, it is best to first review the idea behind the law of one price. Purchasing power parity is both a theory about exchange rate determination and a tool to make more accurate comparisons of data between countries. It is probably more important in its latter role since as a theory it performs pretty poorly. Its poor performance arises largely because its simple form depends on several assumptions that are not likely to hold in the real world and because the amount of foreign exchange activity due to importer and exporter demands is much less than the amount of activity due to investor demands. Nonetheless, the theory remains important to provide the background for its use as a tool for cross-country comparisons of income and wages, which is used by international organizations like the World Bank in presenting much of their international data.

Conceptual Framework

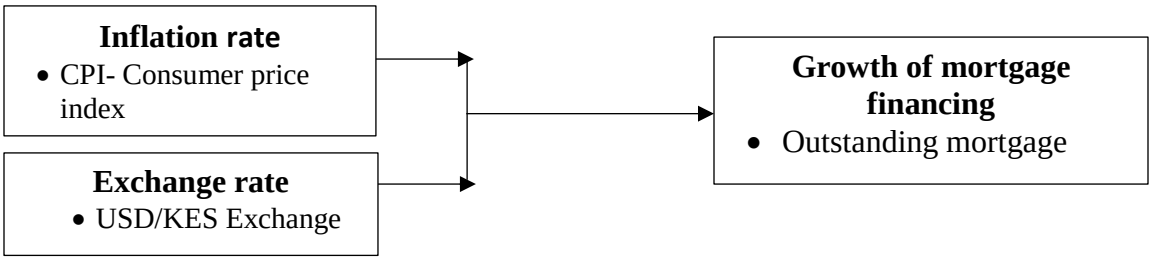

Figure 1: Conceptual Framework

Empirical Literature Review

Inflation reflects the increasing trend in the general price levels of goods and services prices. Further, it reflects the purchasing power of a currency (Singh & Sharma, 2016). Walley (2013) found that inflation is negatively and significantly associated with mortgage market development. Inflation volatility is negatively and significantly associated with Mortgage Depth, while positively and significantly with Housing Loan Penetration, which may indicate the use of housing loans (and thus real estate more generally) as a hedge against inflation, where available. In a study covering 61 countries, Warnock and Warnock, (2008) found that deeper mortgage markets were associated with a stable macroeconomic climate of low and stable inflation.

Dobson (2018) avers that inflation is denoted by the rise of commodity and service prices in an economy. With the growing up in prices, currency values fall. Therefore, each currency unit pays for a lesser amount of commodities and services. As a result, there is reduced purchasing power for each unit of currency. Warnock and Warnock, (2008) studied the macroeconomic factors on mortgage markets performance in Argentina. The macro-economic climate affected the mortgage markets. The mortgage markets performed well when the inflation rate was low.

Taner (2016) on an investigation of the effects of inflation uncertainty on credit markets by using a disequilibrium framework. The study focusing on both the developed and developing countries. The researcher utilized secondary data for the period 1990-2005. The outcomes showed that inflation uncertainty had a negative and significant impact on demand for credit. Walley (2013) on the linkage between inflation and housing finance in Pakistan. Where a regression model was used to determine the association. An inverse association between rates of inflation and growth

in mortgage financing was indicated. Where an increase in inflation triggered a downward demand for mortgage loans.

Owuor, Githii and Mwangi (2018) studied the relationship between macroeconomic factors and mortgage market growth in Kenya. The study theories that informed the study included the lien theory of mortgages and capital assets pricing theory. On the outcome of the study, a significant association between inflation, GDP and growth in the mortgage market was reported. The conclusion made by the researcher revealed; that rates of inflation and growth in GDP are key factors that determine the mortgage market uptake in Kenya.

Imbuga (2014) assessed the effect of inflation on loan repayment among financial intermediaries in Kenya. Results showed an inverse association between the two variables. In periods of economic downturn, there were increased levels of loan defaults. During such periods, the CBK increases the base lending rates as a way of reducing the supply of money in the economy. In periods of economic stability, the borrowers were aggressive in making loan repayments. The study further established that increase inflation negatively influences loan repayment.

The average exchange rate during a fiscal year is used as a measurement for the exchange rate. Chowdhury and Rasid (2017) and Menicucci and Paolucci (2016) suggested that foreign exchange rates should be used as an important factor for banks' profitability. Boamah, (2017) also argues that a stable currency is an essential ingredient of a successful mortgage market. This is because unstable exchange rates will not attract long-term foreign capital. (Liwali, 2018) noted that the demand for housing in Sub-Saharan Africa (SSA) has surpassed the supply. To meet this demand a few International Housing Finance Institutions (IHFI) have come into play. These include Shelter Afrique, overseas investment corporation, East African Development Bank (EADB) and PTA bank among others.

Siemińska and Krajewska (2015) studied the influence of exchange rate risk on the mortgage market in Poland. The method employed was the critical analysis of the most recent reports and recommendations of the National Bank of Poland, Polish Financial Supervision Authority, Polish Banking Union, and other experts on the subject of financing the real estate market, as well as a comparative analysis of solutions regarding currency risk in selected countries. The study found that exchange rate risk causes the problem of the inadequacy of the collateral for the mortgage following an increase in the exchange rate of the currency in which it was granted.

Owuor, Githii and Mwangi (2018) studied the effect of exchange rate on the growth of the mortgage market in Kenya. The study was descriptive and used secondary quarterly data from 2007 to 2016 obtained from the central bank. Multiple linear regression was used to analyze the data. The study outcomes were that the exchange rate had a positive insignificant relationship with the growth of the mortgage market in Kenya.

METHODOLOGY

The study used a descriptive research design. The target population for this study consisted of a census of all the 42 commercial banks licensed by the Central Bank of Kenya (CBK, 2016). The accessible population is comprised of 35 mortgage lending commercial banks (CBK, 2016). The study utilized data for a period of thirty-five years, covering the period; January 1985 to December 2019. A census of all the 35 commercial banks in Kenya offering mortgage financing services was utilized. Data were collected by the use of secondary data. Times series data analysis was done by the use of STATA software.

RESULTS AND DISCUSSIONS

Correlation Analysis

Table 1: Correlation matrix

	GMF	Inflation	FOREX
GMF	1.0000		
	35		
Inflation	-0.3183	1.0000	
	0.0424		
	35	35	
FOREX	-0.8087	-0.2951	1.0000
	0.0000	0.0852	
	35	35	35

The correlation between inflation and growth of mortgage financing was found to be negative but significant as illustrated by a correlation coefficient of -0.3183 and a significance level of 0.042. This shows that when there is a general increase in the price of goods and services in the economy, mortgage financing drops. A similar inverse relationship between inflation and the growth of mortgage financing was established in Pakistan by Walley (2013) in a study on the linkage between inflation and housing finance in Pakistan where an increase in inflation was found to cause a downward demand for mortgage loans. In Argentina, Warnock and Warnock,

(2008) established an inverse relationship between mortgage markets performance and inflation rate.

The correlation output further shows that the association between exchange rate and growth of mortgage financing was negative and significant. This was shown by the Pearson's r of -0.808 and a significance level of 0.000. The findings were supported by Siemińska and Krajewska (2015) who also found a negative correlation between exchange rate and mortgage growth in Poland. In contrast to the findings, Owuor, et al., (2018) on the effect of exchange rate on the growth of the mortgage market in Kenya found that exchange rate had a positive insignificant relationship with the growth of the mortgage market in Kenya.

Regression Analysis

Regression analysis was executed on the data to determine the effects of Inflation and foreign exchange rate on the growth of mortgage financing among commercial banks in Kenya.

Table 2: Regression output

Source	SS	df	MS		Number of obs =	35
					F(2, 32) =	31.20
Model	5.20444742	2	2.60222371		Prob > F =	0.0000
Residual	2.6692243	32	.083413259		R-squared =	0.6610
					Adj R-squared =	0.6398
Total	7.87367172	34	.23157858		Root MSE =	.28881

GMF	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Inflation	-.0.246676	.055768	-4.42	0.004	-.0164163	-.007081
FOREX	-0.136620	.032881	-4.16	0.000	-.0098391	-.0175008
_cons	3.662711	.162482	22.54	0.000	3.331745	3.993675

The outcomes point out that inflation and the foreign exchange rate has 0.6610 or approximately 66.10% combined explanatory power on the growth of mortgage financing among commercial banks in Kenya as is revealed by the coefficient of determination (R-sq). The analysis of variance (ANOVA) outcomes additionally indicates that the regression model is significant. This is noticeably pointed out by the probability of the F-statistic (0.000). The outcomes illustrate the model's fitness as a good estimator of the effect of inflation on the growth of mortgage financing among commercial banks in Kenya.

H_{01}: Inflation rate has no significant effect on the growth of the mortgage financing among commercial banks in Kenya

The beta coefficient of inflation is significant at the conventional level of significance. This is demonstrated by the p-value of the t statistic which is at 0.004. It is also evident that inflation has a negative beta coefficient (-0.24667), which suggests that a rise in inflation deteriorates the growth of mortgage financing among commercial banks in Kenya. The outcomes show that inflation is a significant variable that affects the growth of mortgage financing among commercial banks in Kenya. The study thus rejects the null hypothesis that the inflation rate has no significant effect on the growth of mortgage financing among commercial banks in Kenya and concludes that the inflation rate has a significant effect on the growth of the mortgage financing among commercial banks in Kenya. The findings were supported by Walley, (2013) who by using regression analysis, found that inflation is negatively and significantly associated with mortgage market development. In another study covering 61 countries, Warnock and Warnock, (2008) found that a stable macroeconomic climate of low and stable inflation was associated with deeper mortgage markets. A similar proposition was supported by Huybens, 1998) who argued that an increase in the rate of inflation could have at first negative consequences on financial sector performance through credit market frictions which entail the rationing of credit leading to a reduction in intermediary activity as well as capital formation. More so, according to the Fisher effect theory, real estate prices are correlated to the expected inflation (Demand, 2003).

H_{02}: Exchange rate has no significant effect on the growth of the mortgage financing among commercial banks in Kenya

The exchange rate has a p-value for t-test of 0.000 which is less than 0.05 meaning that exchange has a significant effect on the growth of mortgage financing among commercial banks in Kenya at a 95% confidence level. The coefficient of the exchange rate is -0.1366 and the coefficient of the constant is 3.66. The coefficient of the exchange rate is a negative coefficient meaning that the relationship is negative in that a unit rise in the exchange rate would lower the growth of mortgage financing among commercial banks by 0.136 units. The study, therefore, rejects the null hypothesis that the exchange rate has no significant effect on the growth of mortgage

financing among commercial banks. Thus the findings show that exchange has a significant effect on the growth of mortgage financing among commercial banks in Kenya. In contrast to the findings, in their study Owuor, et al., (2018) on the effect of exchange rate on the growth of the mortgage market in Kenya found that exchange rate had a positive relationship with the growth of the mortgage market in Kenya. The study was descriptive and used secondary similar to the current study. However, the study used quarterly data from 2007 to 2016 obtained from the central bank while the current study used annual data from 1985 to 2019.

Conclusion

The correlation between inflation and growth of mortgage financing was found to be negative but significant. Thus when there is a general increase in the price of goods and services in the economy, mortgage financing drops. The regression outcomes show that inflation is a significant variable that negatively affects the growth of mortgage financing among commercial banks in Kenya. The regression findings further reveal that exchange has a significant negative effect on the growth of mortgage financing among commercial banks in Kenya.

Recommendations

The study concluded that inflation which is part of the Central Bank of Kenya's monetary policy instruments had a direct link on mortgage financing. The research proposes that Kenya's central banks put in place mechanisms to guarantee that inflation does not have an adverse impact on bank mortgage financing.

According to the findings, there is a strong link between exchange rates and mortgage finance. As a result, the study advises that the government guarantees currency stability since currency fluctuations may have a negative impact on commercial bank mortgage borrowing.

REFERENCES

Agao, E. (2014). *The effect of macroeconomic variables on the mortgage uptake for mortgage industry in Kenya* (Doctoral dissertation, University of Nairobi).

Beck, M., Bryman, A., & Liao, T. (2016). *The Sage encyclopedia of social science research methods*. Sage Publications.

Central Bank of Kenya (2018). *Bank Surveillance Report.* Pg. 21-23

Central Bank of Kenya. (2017). Banking Supervision Annual Report. Nairobi: Central Bank.

Devereux, M. B., & Engel, C. (2016). Monetary policy in the open economy revisited: Price setting and exchange-rate flexibility. *The Review of Economic Studies*, *70*(4), 765-783.

Dobson, J. A. (2018). *Modelling survival data in medical research*. CRC press.

Hass Consult Survey. (2013). *Kenyan Property Market*. Nairobi: Hass Consult.

Imbuga, B. M. (2014). *An assessment of the effect of inflation on loan repayment among commercial banks in Kenya* (Doctoral dissertation, University of Nairobi).

Jumbale, D., K. (2016). *The Relationship between House Prices and Real Estate Financing in Kenya* (Doctoral dissertation, University of Nairobi).

Muli, N. F. (2016). An assessment of the factors affecting the growth in real estate investment in Kenya. *Unpublished MBA Thesis. University of Nairobi*.

Owuor, N. D., Githii, W., & Mwangi, M. (2018). The relationship between macroeconomic factors and mortgage market growth in Kenya. *European Scientific Journal*, *14*(10), 68-82.

Polit, D. F., Beck, T., & Owen, S. V. (2016). Focus on Research Methods Is the CVI an acceptable Indicator of Content Validity ? Appraisal and Recommendations. *Research in Nursing & Health*, *30*(6), 459–467.

Siemińska, E., & Krajewska, M. (2015). Exchange rate risk on the mortgage market. *Real Estate Management and Valuation*, *23*(4), 74-84.

Taner. M. Y. (2016). *Effects of Inflation Uncertainty on Credit Markets:* A Disequilibrium Approach.

Walley, S. B. (2013). *Housing Finance across Countries: New Data and Analysis.*

World Bank report. (2016). *Housing Finance Policy in Emerging Market*. ISBN: 978-0-82137750-5.