

MORTGAGE FINANCE, MACROECONOMIC FACTORS AND HOUSING DEVELOPMENT IN NIGERIA

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Abstract

Globally, sustainable housing development is a critical objective nations strive to achieve, particularly in Nigeria, where a population of 400 million is projected by 2050. This research investigates the how macroeconomic factors moderate the relationship between mortgage finance and housing development in Nigeria. The research employed an Autoregressive Distributed Lag (ARDL) model and examined variables such as mortgage loans, mortgage interest rates and mortgage equity, adjusted for macroeconomic conditions such as inflation, interest rate, consumer price index and income levels. Data were sourced from the World Bank World Development Indicator (WDI), the CBN Statistical Bulletin and United Nations World Governance Indicator (WGI) between 2005 and 2022. Findings from the research indicate that macroeconomic factors significantly modulate the effectiveness of mortgage financing in enhancing housing development. Specifically, the empirical analysis reveals a significantly weakening influence of macroeconomic factors on mortgage loan efficacy in the long run with a coefficient of 0.0041 (p-value; 0.0005), and a negatively significant influence of macroeconomic factors in the effectiveness of mortgage interest with a coefficient of -0.00503 (p-value; 0.0002). Consequently, the research recommends that policymakers implement holistic measures to stabilize the economy, while incentivizing mortgage lending to drive housing development forward. By creating a conducive macroeconomic environment for mortgage finance institutions and potential borrowers, Nigeria can effectively align its housing policies with sustainable development goals that guarantees access to adequate and affordable housing for its growing population.

Keyword: Housing development, macroeconomic factors, mortgage finance

Introduction

Globally, achieving sustainable development is a goal every nation strives to achieve. The need to ensure socially, economically and environmentally inclusive development, through provision of adequate social services such as housing, functional and livable environment among others, for both the present and future generation has assumed an all-important position. This is more critical as every man requires a safe abode as part of his physiological needs. Shelter is a basic necessity in human life, so much that it was identified in Abraham Maslow's hierarchy of needs as a major part of other physiological needs like air, water, food and clothing. Ensuring equal access to adequate, safe and affordable housing is also the first of the policy targets of the United Nations in its bid to fulfil its 2030 vision of achieving sustainable cities and communities globally. Efficient availability of mortgages may also promote financial market development through stimulation of investment in housing sector (see Harris and Arku (2006); Nuri and Nothaft (2017)).

The United Nations as at 2023, estimates Nigeria's population at 228 million, with a projection that by 2050, the country's population will rise to 400 million. More than 40% of these estimated population, according to Adedeji (2022) reside in cities, and in most cases, slums, creating a demand for affordable housing, because of inability to match the population growth with simultaneous provision of adequate housing and resources for development.

According to Adedeji (2022), the dearth of long-term financing poses a serious challenge to housing development in Nigeria. The prime lending rate in the banking industry is on the high at 17.5%, making it costly for consideration of bank loans for development of residential buildings. The social housing scheme that the National Housing Fund of the Federal Mortgage Bank of Nigeria (FMBN), which attracts relatively low interest rate is constrained by the very limited level of fund, given that major proportion of the fund is mobilized as depository contributions from a meager 2.5per cent of monthly income of Nigerians workers.

A major factor that could constrain the efficacy of mortgage finance in tackling housing challenge is unstable macroeconomic environment. The World Bank (2019) asserted that unstable macroeconomic environment for mortgage finance usually discourages financial institutions' involvement in housing finance, as they are understandably risk averse; they are only willing to lend to the least risky clients, which usually jeopardizes the pursuit of social housing schemes that could avail the majority of Nigerians a livable home. This position was held by Adedeji (2022), who noted that some of the challenges militating against the robust growth of the housing sector includes a dearth of long term mortgage finance, challenging macro-economic environment with high mortgage interest, equity and inflation rates. Consequently, this research attempts to examine the interactive effect of macroeconomic factors in the relationship between mortgage finance and housing development in Nigeria.

Literature Review

Mortgage Finance

McDonald & Thornton (2008), noted that the term mortgage can be traced to the ancient French, which literally connotes "death vow". However, contextually it does not refer to the death of the mortgagor, but that of the loan. The logic behind this, is that mortgages, like other types of loan facilities, is characterized by a fixed term to maturity; that is, a date at which the loan is to be fully recuperated. Today, mortgages are paid in installments; based on a pre-agreed schedule, in a way that the loan is repaid over time rather than as a lump sum at maturity, a repayment system known as *amortization*, derived from "mortal", a Middle English for "kill". Similarly, it does not refer to the mortgagor's murder, but "killing off" the mortgage by exhausting it over time. In same vein, Siyan et al. (2020) posited that mortgages, which are loans backed by real estate, are the traditional type of real estate debt. He corroborated that the word mortgage is derived from two Middle English words of French origin, "mort" meaning death or dying and "gage" meaning commitment or responsibility. As a result, a mortgage was a "dying commitment," meaning that it had a limited lifespan rather than being permanent.

Housing Development

According to the Nigeria National Housing Policy (2012), housing development is the process of providing safe, comfortable, attractive, functional, affordable, and identifiable shelter in a proper setting within a neighborhood, supported by ongoing maintenance of the built environment for the everyday activities of individuals and families within the community, reflecting their socioeconomic, cultural, and personal preferences. This definition is a reflection of the idealism behind the ability of a functional housing system to provide shelter for every category of people, without limitations as to one's socio-economic status in society. The policy document acknowledged housing quality and homeownership as a measure of household wealth and GDP, which serves as a good indicator of a country's level of economic growth, standard of living and level of civilization. The Nigeria housing industry, according to the document, has the capacity to improve living standards, create jobs, boost productivity and reduce poverty. Additionally, it can significantly address issues of income inequality and security while lowering the rate of crime, insurrections, militancy and terrorism.

Macroeconomic Factors

The prevailing macroeconomic climate in any nation plays a major role in its ability to service the housing financial market and promote sustainable housing to its population. Boamah (2009) noted that a stable macroeconomic environment, particularly, low inflation and interest rates are prerequisites for a successful mortgage market. Factors such as interest rate, inflation rate and income level are very crucial for the attainment of a vibrant mortgage market. Hence, the need for policy makers to make proactive effort at providing conducive environment that will stimulate housing market and housing finance (Warnock, and Warnock, 2008; Ahiadorme, 2016). The World Bank (2019) underscores the implication of unstable macroeconomic environment for mortgage finance, noting that it discourages private sector institutions' involvement in housing finance.

The cost of spending borrowed money over time is essentially the interest rate. It's also referred to as the rate of return on investment. Interest rates are predicted to fluctuate in tandem with changes in inflation

rates (Brealey et al, 2006). Bett (2011) defines inflation as a gradual increase in the average level of prices for goods and services within an economy. According to KPMG (2015), the high rate of inflation, which is a primary contributor to high interest rates, significantly restricts the affordability of housing. The price of one currency relative to another is known as the exchange rate (Kasim, Ajayi, Omir & Alabi, 2023). Many people have been deterred from beginning or continuing the construction of new homes as a result of the ongoing devaluation of the Naira and rising costs for residential building supplies, which are primarily imported, thus adversely affecting housing development (Agbola, 2005; Uma *et al.*, 2019). Although everyone desires quality housing, it however comes with a cost, which many could not afford. Quality housing involves the provision of adequate funding, which links it to the level of individual's income (Awe, Adeboye, Akinluyi, Okeke, Yakubu & Awe, 2023), because quality housing is a direct product of available funds. Housing affordability can be referred to as the financial enablement of an individual to pay for the total cost of standard housing, from the purchase of land, payment of professional fees to construction, its services and maintenance. The income is the amount earned as a result of labour, or services rendered or work or investments. It

Theoretical Underpinning

Investment Base Theory

The investment base theory was first proposed by James Poterba in 1984. The focus of this theory is on housing supply as a function of a number of economic factors such as actual house price, new building cost, land availability, and finance availability (Okolie & Erhijakpor, 2020). Poterba stated three (3) key assumptions. First, the housing sector is made up of competing enterprises, and its output is determined by the real price of house construction; second, materials of production have limits; and third, an increase in housing demand leads to an increase in the equilibrium price structure of housing. Credit availability and construction costs are the two most important factors of housing supply. Topel and Rosen (1988) developed a model to Poterba's housing theory, which includes economic expectations such as interest rates, inflation rates, and their lag values. Given the slightly unfavorable macroeconomic environment in Nigeria, the cost of building materials has skyrocketed, causing the people to be unable to afford decent housing and as a result, may stiffen the efficacy of mortgage finance in causing housing development.

Empirical Review

Nataliya, et al (2023) analyzed the macroeconomic and borrower-specific credit risk factors affecting residential real estate mortgages in Germany. Relying on a macroeconomic panel VAR model, the research showed a significant link between foreclosures, house price dynamics and unemployment. The research, also predicts a significant increase in mortgage losses in a stress scenario, suggesting a significant effect of macroeconomic factors on mortgage financing. The research however did not include variables such as inflation and interest rates in its model. Laura, et al (2023) examined the effect of cost of financing homeownership on household and banks vulnerability in Europe, using Household Finance and Cost of Living Data. The study was informed by the rising cost of living that has eroded real income. The research concluded that surge in interest rates has exposed borrowers for mortgage purposes to more vulnerabilities and financial distress. The research limits itself to the effect of housing cost on real income, without holistically considering the effect of income level on housing finance. Specifically, Laura, et al study suggests that under the baseline of the IMF macroeconomic forecast, about one-third of all households could struggle to meet basic expenses by the end of 2023. This research supports the assumption that macroeconomic factors could actually threaten effective mortgage finance. This position is validated by the European Government report on structural issue in 2009, which posited that household debt as a percentage of GDP, has increased in most euro area countries over the past decade, and represents households' largest liability category.

Ding (2022) studied how macroeconomic variables affects housing prices in the United States. The research employed time series data from 191 observation samples over the past 15 years. The dataset was collected from FRED and analyzed using multiple linear regression. The findings from the research

showed that increase in housing stock and economic growth are the major determinant of the rise of the housing price index in the United States. Conversely, mortgage rates and unemployment rates were found to have negative effect on housing price, while population growth was found to have no significant effect on housing price. Like Jiantong (2020), the research does not focus on the determinants of housing development, even when housing development is found to affect house prices.

From a cross-national standpoint, Tripathi (2019) examines how macroeconomic factors contributed to rising housing prices. Rent, price-to-income ratio, price-to-rent ratio, urbanization, per-capita GDP, inflation, the proportion of the population aged 15–64, GDP growth rate, broad money, and real exchange rate all had a positive and statistically significant impact on real house prices, according to the analysis of random-effect models. The research however only focused on the effect of macroeconomic factors on housing prices, and holistically look at macroeconomic factors' impact on housing development.

Methodology

This research adjusted the mortgage finance variables for a composite macroeconomic factors variable, to obtain an interaction independent variable. The interaction variables are then regressed against the dependent variable using the Autoregressive Distribution Lag (ARDL).

The ARDL model is specified as;

$$\text{LnHDEL}_{(t)} = \alpha_0 + \alpha_1 \text{LnHDEL}_{(t-1)} + \alpha_2 \text{LnHDEL}_{(t-2)} + \alpha_3 \text{MACMLOAN}_{(t)} + \alpha_4 \text{MACMLOAN}_{(t-1)} + \alpha_5 \text{MACMINT}_{(t)} + \alpha_6 \text{MACMEQU}_{(t)} + \alpha_7 \text{MACMEQU}_{(t-1)} + \varepsilon_t$$

Where:

$\text{LnHDEL}_{(t)}$ is the dependent variable at time t.

$\text{LnHDEL}_{(t-1)}$ and $\text{LnHDEL}_{(t-2)}$ are the lagged values of the dependent variable.

$\text{MACMLOAN}_{(t)}$, $\text{MACMLOAN}_{(t-1)}$, $\text{MACMINT}_{(t)}$, and $\text{MACMEQU}_{(t)}$ and $\text{MACMEQU}_{(t-1)}$ are the current and lagged values of the interaction variables of mortgage loan, mortgage interest rate and mortgage equity, adjusted for macroeconomic factors).

ε_t is the error term at time t.

$\alpha_0, \alpha_1, \alpha_2, \dots, \alpha_7$ are the coefficients to be estimated.

Data Analysis

ADF Unit Root Test

Intermediate ADF test results

Series	Prob.	Lag	Max Lag
LnHDEL	0.2813	1	1
LnMLOAN	0.3541	1	1
LnMEQU	0.1304	1	1
LnMINT	0.0034	1	1
LnPCI	0.1323	1	1
INT	0.0535	1	1
INF	0.0899	1	1

Source: Author's computation (2024) using Eviews 12

The above table shows the result of the Augmented Dickey-Fuller (ADF) test, which is used to determine if a time series is stationary or has a unit root. The test is used to examine the null hypothesis that a series has a unit root (i.e., it is non-stationary) against the alternative hypothesis that the series is stationary. The ADF - Fisher Chi-square is 49.5027, with a p-value of 0.0073, while the Choi Z-stat is -2.31235, with a p-

value of 0.0104. The p-values are used to determine whether the null hypothesis can be rejected. Since the p-value is less than the 5% level of significance, the null hypothesis is rejected, and the series is considered to be stationary.

However, the results indicate that some series individually have a p-value less than 0.05, indicating that they stationary. Specifically, mortgage interest (LnMINT) has a p-value of 0.0034 (< 0.05), interest rate (INT) has a p-value of 0.0535 (< 0.05). The other series LnHDEL, LnMLOAN, LnMEQU, LnPCI and INF) have p-values greater than 0.05, suggesting that these series may have a unit root or not likely to be stationary and may require differencing or other transformations to make them stationary before analyzing them, hence, the differencing.

Model Selection Table

Model	LogL	AIC	BIC	HQ	Adj. R-sq	Specification
15	-0.376629	0.922079	1.260086	0.939387	0.705829	ARDL(2, 1, 1, 0)

Source: Author's computation (2024) using Eviews 12

The table presents the model selection table for model 2, having consider the log likelihood of the model, which measures the goodness of fit of the model; Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), Hannan-Quinn criterion (HC) and adjusted R-squared values. The model with the best performance, which has a log likelihood of -0.376629, AIC of 0.922079, BIC of 1.260086, HQ of 0.939387, adjusted R-squared value of 0.705829, and is an ARDL(2, 1, 1, 0) model is the most well-fitting and best-performing model among the set of competing models.

ARDL Long Run Form and Bounds Test

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LnHDEL(-1)*	0.057285	0.029619	1.934059	0.0851
MACMLOAN (-1)	0.004144	0.000774	5.357443	0.0005
MACMEQU (-1)	-0.000769	0.000500	-1.537364	0.1586
MACMINT**	-0.005038	0.000850	-5.929700	0.0002
D(LnHDEL(-1))	-0.646104	0.161316	-4.005213	0.0031
D(MACMLOAN)	0.003183	0.000555	5.732241	0.0003
D(MACMEQU)	0.000163	0.000549	0.296992	0.7732
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MACMLOAN	-0.072341	0.038444	-1.881719	0.0926
MACMEQU	0.013423	0.010271	1.306874	0.2237
MACMINT	0.087945	0.047597	1.847709	0.0977

Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	10.03603	10%	2.01	3.1
K	3	5%	2.45	3.63
		2.5%	2.87	4.16
		1%	3.42	4.84
Finite Sample: n=35				
Actual Sample Size	16	10%	-1	-1
		5%	-1	-1
		1%	-1	-1
Finite Sample: n=30				
		10%	-1	-1
		5%	-1	-1
		1%	-1	-1
t-Bounds Test				
Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	1.934059	10%	-1.62	-3
		5%	-1.95	-3.33
		2.5%	-2.24	-3.64
		1%	-2.58	-3.97

Source: Author's computation (2024) using Eviews 12

	Model 1	Model 2	Model 3	Model 4				
K	3	3	3	3				
F-statistic	2.864	2.319	2.241	10.404				
Critical Bound Value								
Significance	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound	I(0) Bound	I(1) Bound
10%	2.01	3.1	2.26	3.35	2.26	3.35	2.26	3.35
5%	2.45	3.63	2.62	3.79	2.62	3.79	2.62	3.79
2.5%	2.87	4.16	2.96	4.10	2.96	4.10	2.96	4.10
1%	3.42	4.84	3.41	4.68	3.41	4.68	3.41	4.68

Source: Author's Computation, (2023).

Table 4.4.2 above shows the results of the ARDL (AutoRegressive Distributed Lag) model bound test for model 2. It seeks to estimate the long-run relationship between the variables in the model and test for the presence of a long-run relationship. The first part of the output shows the results of the conditional error correction regression, which is used to estimate the short-run dynamics of the variables.

The coefficients of $LnHDEL(-1)$ is 0.057285 (significant at 8.5%), $MACMLOAN(-1)$ is 0.004144 (significant at 0.5%), $MACMEQU(-1)$ is -0.000769 (not significant), $MACMINT$ have coefficient of -0.005038 (significant at 0.2%), $D(LnHDEL(-1))$ is -0.646104 (significant at 3.1%), $D(MACMLOAN)$ is 0.003183 (significant at 0.3%) and $D(MACMEQU)$: 0.000163 (not significant). The error correction term is not significant, which suggests that there is no long-run relationship between the variables.

The second part of the output shows the results of the levels equation, which is used to estimate the long-run relationship between the variables. $MACMLOAN$ and $MACMEQU$ are not significant, while $MACMINT$: is significant at 10% level of significance (9.7%). The error correction term is not significant, which suggests that there is no long-run relationship between the variables.

The F-Bounds test, which is also used to test for the presence of a long-run relationship between the variables, have a test statistic of 10.03603, but it is not significant at any level. Equally, the results of the t-Bounds test, with test statistic of 1.934059, which is not significant at any level, also affirm variables in the model have no long run relationships.

ARDL Estimation

Model two seeks to address objective three of this research work, which aims to establish the effect of macroeconomic variables in the relationship between mortgage finance and housing development. Each variable of mortgage finance were adjusted for macroeconomic influence. The dependent variable is housing delivery ($LnHDEL$), and the independent variables are $MACMLOAN$, $MACMINT$ and $MACMEQU$, which are interaction variables generated by adjusting mortgage finance variables for macroeconomic variables. In the context of regression analysis and time series modeling, variables can be multiplied by two or more variables, to essentially create a new variable that captures the interaction or joint effect of those variables. The concept of interaction term in regression Analysis and interdependence: The idea of interactions between variables is rooted in econometric analysis (Gujarati, 2003; Wooldridge, 2010; Greene, 2018).

The ARDL model is estimated as follows:

$$LnHDEL_{(t)} = \alpha_0 + \alpha_1 LnHDEL_{(t-1)} + \alpha_2 LnHDEL_{(t-2)} + \alpha_3 MACMLOAN_{(t)} + \alpha_4 MACMLOAN_{(t-1)} + \alpha_5 MACMINT_{(t)} + \alpha_6 MACMEQU_{(t)} + \alpha_7 MACMEQU_{(t-1)} + \varepsilon_t$$

Where:

$LnHDEL_{(t)}$ is the dependent variable at time t.

$LnHDEL_{(t-1)}$ and $LnHDEL_{(t-2)}$ are the lagged values of the dependent variable.

$MACMLOAN_{(t)}$, $MACMLOAN_{(t-1)}$, $MACMINT_{(t)}$, and $MACMEQU_{(t)}$ and $MACMEQU_{(t-1)}$ are the current and lagged values of the independent variables.

ε_t is the error term at time t.

$\alpha_0, \alpha_1, \alpha_2, \dots, \alpha_7$ are the coefficients to be estimated.

ARDL Estimation Result

Dynamic regressors (2 lags, automatic): MACMLOAN MACMINT
MACMEQU

Selected Model: ARDL (2, 1, 0, 1)

Variable	Coeff.	Std. Error	t-Statistic	Prob.*
LnHDEL(-1)	0.411181	0.150906	2.724744	0.0234
LnHDEL(-2)	0.646104	0.161316	4.005213	0.0031
MACMLOAN	0.003183	0.000555	5.732241	0.0003
MACMLOAN (-1)	0.000961	0.000608	1.580878	0.1484
MACMINT	-0.005038	0.000850	-5.929700	0.0002
MACMEQU	0.000163	0.000549	0.296992	0.7732
MACMEQU (-1)	-0.000932	0.000579	-1.611109	0.1416
R-squared	0.823497			
Adjusted R-squared	0.705829			
Durbin-Watson stat	2.530875			

Source: Author's computation (2024) using Eviews 12

The above table presents the output of the ARDL for model two, which seeks to establish the interference of macroeconomic variables in the relationship between mortgage finance and housing development. The dependent variable is LnHDEL and the independent variables are MACMLOAN, MACMINT, and MACMEQU. The coefficients represent the estimated change in the dependent variable LnHDEL for a one-unit change in each of the independent variables, while controlling for the lagged values of the dependent variable and the other independent variables. The coefficients on the lagged values of LnHDEL (LnHDEL₍₋₁₎ and LnHDEL₍₋₂₎) are 0.411181 and 0.646104, respectively, which means that the current value of LnHDEL is influenced by its own lagged values.

From the above analysis, the R-Squared of 0.823497 suggests goodness of fit for the estimated model. Equally, Adjusted R-squared: 0.705829, indicating that about 70% of the variation in LnHDEL can be explained by the independent variables after adjusting for degrees of freedom. Durbin Watson value, which ranges between 2-4, suggest the series in the model does not exhibit autocorrelation with a value of 2.53. The standard error of the coefficients and that of the model (0.330312) also suggest a precise estimate. The Sum of squared residual (RSS) at 0.981955 also suggest that the time series data in the model follows the normality assumption.

The ARDL result above revealed that over 82% variation in housing delivery is explained by mortgage loan, mortgage equity and mortgage interest, influenced by macroeconomic factors such as inflation, interest rate, exchange rate and per capita income, with R-squared of 0.823497. The coefficient of mortgage loan shows that macroeconomic factors severely downplays the potency of mortgage loans in causing housing delivery. While mortgage loan independently cause housing delivery in a strong positive and significant manner, the interference of macroeconomic environment shows a weakened effect of mortgage loan on housing delivery, with a coefficient of 0.003183 (initially 1.796513), albeit, insignificant. The coefficient on the lagged value of MACMLOAN is 0.000961 (initially 2.038487), which means that the impact of changes in MACMLOAN on LNHDEL is delayed by one period.

The negative effect of mortgage equity on housing delivery is however also lessened by the interplay of macroeconomic variables. Mortgage equity, which hitherto showed a strong and significantly negative effect on housing delivery, with a coefficient of -1.028369, has a less negative impact with the interference of macroeconomic variables, with a coefficient of -0.005038, which means that for every one-unit change in MACMEQU, there is an increase of 0.000163 units in LnHDEL. The coefficient on

the lagged value of MACMEQU is -0.000932, which means that the impact of changes in MACMEQU on LnHDEL is delayed by one period.

Mortgage interest, which also showed a strong negative and significant association with housing delivery, with a coefficient of -3.618896, is also enhanced by the interference of macroeconomic variables. The influence of macroeconomic variables reduced the negative effect of interest rate on housing development, from -3.618896 to -0.000932.

Overall, the current value of LnHDEL is influenced by its own lagged values (i.e., the values from previous periods), as well as by the current values of MACMLOAN, MACMINT, and MACMEQU. Changes in MACMLOAN is also revealed to have a positive impact on LnHDEL, with a delay of one period. With macroeconomic interference, MACMEQU have a very small positive impact on LnHDEL. Changes in MACMINT have a negative impact on LnHDEL, while changes in the lagged values of all variables (except MACMEQU) have a significant impact on the current value of LnHDEL.

Discussion of Findings

The findings from this research reveal a significantly negative influence of macroeconomic factors in the relationship between mortgage finance and housing development both in the short run and long run, especially for mortgage loan and mortgage interest rate. This is reflected in the very weak significantly positive effect of macroeconomic factors influenced mortgage loan have on housing development, with a coefficient of 0.003. Ditto, mortgage equity also reflect a negative effect on housing development with the interference of macroeconomic factors with the interference of macroeconomic variables (-0.005038), however, only in the short run with a period lag. Macroeconomic factors equally influenced a negative effect of interest rate on housing development (-0.000932), in the short and long run.

Generally, the current value of housing delivery is influenced by its own lagged values, implying that housing delivery in the present year is influenced by the previous year's values from previous period, as well as by the current values of macroeconomic and mortgage loan interaction variables of mortgage loan (MACMLOAN), mortgage interest rate (MACMINT) and mortgage equity (MACMEQU). Changes in MACMLOAN is also revealed to have a positive impact on LnHDEL, with a delay of one period. With macroeconomic interference, MACMEQU have a very small positive impact on LnHDEL. Changes in MACMINT have a negative impact on LnHDEL, while changes in the lagged values of all variables (except MACMEQU) have a significant impact on the current value of LnHDEL.

Conclusion and Recommendation

Mortgage loans remain a vital source of funding for the housing development, but in order to fully realize their potential, significant changes to the macroeconomic environment are required. The results validate that, in order to improve housing delivery in Nigeria, sound institutional governance and macroeconomic stability must be given cognizance in housing financing policy.

This research established that macroeconomic conditions act as moderating factors affecting the potency of mortgage loans on housing delivery. The regression analysis revealed that while mortgage finance had a strong independent effect on housing delivery, their effectiveness was diminished under unfavorable macroeconomic conditions.

The research therefore recommends that governments at various levels and policymakers should create conducive environments for mortgage lending by implementing policies aimed at stabilizing inflation rates, reducing interest rates, and providing incentives for mortgage lending to stimulate housing delivery.

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