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Macroeconomic Determinants of Housing Supply in Kenya

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Abstract

Kenya is one of the developing countries trying to provide affordable and decent housing to its residents. Macroeconomic instability persists despite efforts, impeding housing supply from both government and real estate sectors. This study examines the macroeconomic factors influencing Kenya's housing supply from 1980 to 2024, using time-series data. The augmented Dickey-Fuller and Johansen cointegration tests are conducted, along with the Vector Error Correction Model, to assess long run relationships between the variables, which allows for the use of the error correction model. Moreover, the Granger causality test examines the causal links between the variables. In the long-run, house prices and economic growth positively impact house supply while inflation rate, interest rate and the government expenditure negatively impact the supply of housing. Short-run analysis reveals a negative coefficient for interest rates. Granger causality testing supports the one-way feedback hypothesis between interest rate and supply of houses. Study findings suggest that government should explore methods to develop financial products and instruments that make it easier for individuals and governments to finance housing projects and sustain reasonable profit margins. Additionally, managing

inflation and interest rates can create a favourable macroeconomic environment for investors, which positively impacts the housing supply.

Keywords: *Housing price, Interest rate, Inflation rate, Economic growth, Government expenditure*

***JEL Classification**: R31, R38, E44*

1. Introduction

The national housing sector in Kenya is not an exception to the world trend, where rapid urbaniSation and a burgeoning population are putting tremendous pressure on the availability of affordable and decent houses (Okuta, Kivaa, Kieti & Okaka, 2024). By 2030, the population projection for Kenya is 66 million, with over 30% of that population living in urban settings (Chileshe, Njau, Kibichii, Macharia, & Kavishe, 2022). This % is expected to rise significantly in the coming years (Coskun, 2023; Galster & Lee, 2021). Even though the government put in place what it hoped would be a game-changer towards achieving its goal of providing 500,000 affordable homes by 2022 through the Affordable Housing Programme (AHP), supply remains insufficient in terms of demand, especially in major cities like Nairobi, Eldoret, Nakuru, Mombasa and Kisumu (Acolin, Hoek-Smit & Green, 2022; Jonathan, 2023). Macroeconomic instability in Kenya, characterized by fluctuating inflation, economic output, inefficient public spending, rising interest rates, and volatile construction material prices, has hindered growth in the housing sector (Chiwuzie & Dabara, 2021; du Plessis, 2025). Inadequate financing for affordable housing, coupled with the spiralling costs involved in most construction projects, hampers access to homeownership for most Kenyans (Chege, Gholipour& Yam, 2024).

The National Housing Corporation (NHC) serves as the primary government agency in Kenya for constructing homes across various income brackets, including middle and upper-class residences the main

implementing organisation (Theuri, 2013; Republic of Kenya, 2025). The National Housing Corporation was instrumental in the recent delivery of affordable housing, including that which was constructed and given to local government agencies. However, the National Housing Corporation's role in providing affordable housing was diminished as a consequence of the management of the partnerships between the corporation and different local authorities becoming unmanageable (Chirchir, Mwangi, &Iraya, 2024). There was less confidence in the efficient use of the awarded monies as a product of the two parties' unfriendly relationship (Theuri, 2013). This is a significant obstacle that prevents the increasing housing deficit from being mitigated. Furthermore, the National Housing Corporation (NHC) in Kenya faces numerous challenges, including macroeconomic instabilities, financial constraints, high default rates on loans from local authorities, and competition from the private sector. Lack of land, inadequate infrastructure, and lengthy bureaucratic processes also impede development. As shown in Table 1, the residential units completed by the NHC are relatively low. Table 1 presents some selected years and the output of the National Housing Corporation in terms of residential units to show the declining impact of the state agency.

Table 1: Completed Houses by National Housing Corporation

Year	Residential Units(No.)
2015	45
2016	240
2017	0
2018	180
2019	100
2020	2332

Source: Republic of Kenya (2015-2020).

Inflation, primarily driven by escalating construction material and labour costs, is a major cause of increased project expenses and cost overruns in the construction sector (Babalola, 2021; Chirchir, Mwangi, & Iraya, 2024). In Kenya, inflation is a significant factor affecting construction costs and housing supply, so measures that are stable to this inflation are

needed. Interest rates, as it is well said, affect housing markets positively and negatively (Theuri, 2013; Udensi, Oyama & Abbey, 2024;Öztürk & Akca, 2023). Per capita Incomes and economic growth are limited to increasing housing demand and prices if the supply cannot sustain itself (Udensi et al., 2024). Unaffordable housing limits individual purchasing capacity. Increasing housing supply stabilises prices by meeting demand and moderating market cycles (Öztürk & Akca, 2023). Land and existing housing stock are likely to be two essential components of the housing supply, addressing the overburdened market as such (Öztürk & Akca, 2023; Udensi et al., 2024). It is crucial for Kenyan policymakers to make housing more affordable and stable to know the dynamics of a particular housing system. More so, many studies have investigated the determinants of housing supply worldwide (Galster & Lee, 2021; Lee, Kemp & Reina, 2022), but few studies have expounded explicitly on macroeconomic determinants in developing countries such as Kenya. This study covers that gap by focusing on the following specific objectives captured here:

i. To examine the effect of house prices on housing supply in Kenya
ii. To determine the effect of interest rates on housing supply in Kenya
iii. To analyse the effect of economic growth on housing supply in Kenya
iv. To examine the effect of government housing expenditure on housing supply in Kenya
v. To investigate the effect of inflation rate on housing supply in Kenya

2. Literature Review

Tobin's Q theory postulates that the ratio of the market value of a firm's assets to their replacement cost (Chen & Lee, 1995)influences their decisions concerning investments (Faria et al., 2022). A more excellent Q

specifies that for every unit of constructing an asset, the market values are more than that amount, inviting firms to increase their investment in tangible assets such as housing. Regarding the current research, Tobin's Q theory relates to variables like housing prices, construction cost, and government investment, whereby increased construction costs and higher investment returns spur the further raising of housing supply because of the great opportunities developers face in the housing markets (Ahmad et al., 2023; Chancharat & Kumpamool, 2022). This theory assumes that housing is directly influenced by market conditions and investment opportunities. This theory highlights the interconnectedness of macroeconomic conditions like construction costs, income, and investment levels, providing a comprehensive framework for analyzing Kenya's housing market problems.

Economic growth and increased government investment in housing could create opportunities for private investment in housing, increasing the housing stock supplied (Marcos& Vale, 2024). While government investment can stimulate private investment and housing supply, excessive public spending may lead to short-run inefficiencies and stifle private sector growth (Merga, 2022). This calls for balanced investment strategies to optimise economic outcomes. The structure of land supply has a significant influence on housing prices. This interaction between housing and stock markets could also have a spillover effect since the fluctuations in one can quickly be transmitted to the other by their interactions through consumer wealth and investment behaviour (Irandoust, 2021). From another perspective, while these supply constraints and land-use policies are essential, it has been argued that more general economic factors like interest rates and economic growth play a substantial role in explaining house prices and, therefore, a multidimensional approach is warranted to understand this housing market (Li & Li, 2024).

3. Research Methodology

3.1. Research Design and Data Description

This empirical study applied a quantitative research design to investigate empirically the macroeconomic variables of housing supply in Kenya. The selected research design allows the study to distil complex data and make conclusions based on that data. The study was carried out in Kenya for the period from 1980 to 2024 (45 observations) using time series

secondary data. Kenya was chosen for this unit analysis due to its ambitious plan to provide decent housing for middle- and low-income earners. Secondary data for this research wasobtained from the electronic database of the National Housing Corporation (NHC), State Department for Housing (SDH), Kenya National Bureau of Statistics (KNBS), Kenya Bankers Association (KBA) and the World Bank (WB). The study employed a data collection schedule to collect secondary data. The collected data series was meticulously cleaned to ensure validity and reliability before being entered into the datasheet. Table 2 presents a description of the variables and a priori expected signs.

Table 2: Description of the Variables

Variables	**Measurement**	**Expected sign**	**Data source**
Interest rate (INTR)	Lending interest rate (%)	Negative (Öztürk&Akca, 2023)	WB
Inflation rate (INFR)	Consumer price index (%)	Negative (Akkay,2021)	WB
Economic growth (GDP)	**GDP per capita**	Positive (Akkay, 2021)	KNBS
Government housing expenditure (EXP)	**Government expenditure on housing (%GDP)**	Positive (Gisore et al., 2019)	KNBS
House price index (HPI)	**The average price of houses supplied**	Positive (Ryś&Ryś, 2024)	KNBS
Housing supply (HS)	**The quantity of housing stock supplied**	Dependent variable	KNBS

Source: Authors' compilation from literature (2025).

3.2. Model Specification

In the model specification, the housing supply variable is made a function of six other independent factors identified from empirical and theoretical literature of Theuri (2013),Ayeni (2020), Akkay (2021), and Udensi et al. (2024). The dependent variable, the housing supply (HS)

variable, is usually denoted by the stock or quantity of houses supplied following the studies of Ayieni (2020) and Akkay (2021). The empirical literature has identified explanatory factors to proxy the macroeconomic conditions in Kenya. This research employs five independent variables, such as housing prices (HPI), interest rate (INTR), economic growth (GDP), inflation rate (INFR) and government expenditure (EXP) on the housing sector to explain the changes in housing supply. All explanatory variables are predicted to positively impact Kenya's housing supply, except inflation and interest rates, which are expected to show an inverse relationship. The general model is explicitly specified as follows:

$$HS = f(HPI, INTR, GDP, EXP, INFR)$$

The study estimates a simple log-linear functional model as follows to examine the effect of the above-mentioned explanatory variables on the home supply over the period 1980-2024.

$$LHS_t = \beta_0 + \beta_1 LHPI_t + \beta_2 LINTR_t + \beta_3 LGDP_t + \beta_4 LEXP_t + \beta_5 LINFR_t + \varepsilon_t \quad (1)$$

In the above housing supply model, L represents the logarithm of each variable, and εt indicates the error term in time t of each series. All the absolute values of the explanatory and dependent variables are expressed in the natural log (ln) model to allow for regression coefficients to be treated as elasticities.

3.3. Data Analysis

The study used descriptive and inferential estimation methods to analyse the research data to meet the study objectives. Descriptive statistics and correlation analysis were performed to describe the trends, patterns, associations and properties of study variables. Time series properties were first tested before long-run estimation. Augmented Dickey-Fuller test (ADF) and Philips- Peron (PP) unit root tests were performed to check the stationarity of study factors, and the results are presented in Tables. If the variables have mixed order integration, then the condition for the Johansen Cointegration method is not met, hence the research will resort to Autoregressive Distributive Lag (ARDL) bounds testing technique to the cointegration approach to test for the long run equilibrium in the model which was propagated by Pesaran et al. (2001). ARDL model addresses autocorrelation and endogeneity problems following the empirical works of Akkay (2021). However, if all variables are non-stationary, the study will use the Vector Error Correction Model (VECM) or Vector Autoregressive (VAR), meaning variables are

correlated. The VECM is a constrained VAR that has cointegration built into it to use the pattern for nonstationary sequences that are recognised to be cointegrated. However, for the model to be valid, cointegration among the series must exist, indicating a long-run equilibrium relationship between them (Hauser, 2010). Finally, Granger causality will be performed to investigate the causal relation between target research variables.

This study employs four-stage estimation procedures beginning with unit root testing via the augmented Dickey-Fuller (ADF) test and the Phillips-Perron test. Secondly, the Johansen cointegration test was applied to evaluate the cointegration among the variables of the research. Thirdly, causality analysis with the aid of the Granger causality test. Finally, the VECM housing supply function was estimated.

To analyse study objectives (i), (ii), (iii), (iv)and (v) that is the effect of the selected macroeconomic variables (house price, interest rates, inflation rate, economic growth and government housing expenditure) on house supply in Kenya, theVector Error Correction Model (VECM) regression model will be estimated in a single- equation framework to generate long run and short run dynamics and causal relations between variables.

The VECM function of equation (1) is formulated in equation (2) where (Δ) is the first difference operator, (α) is the deterministic drift parameter, and (k) is the optimal lag length.

$$\begin{aligned}\Delta LHS_t = {} & \alpha_0 + \sum_{i=1}^{k} \alpha_{1i} \Delta LHS_{t-i} + \sum_{i=0}^{k} \alpha_{2i} \Delta LHPI_{t-i} \\ & + \sum_{i=0}^{k} \beta_{3i} \Delta LINTR_{t-i} + \sum_{i=0}^{k} \beta_{4i} \Delta LGDP_{t-i} \\ & + \sum_{i=0}^{k} \beta_{5i} \Delta LEXP_{t-i} + \sum_{i=0}^{k} \beta_{6i} \Delta LINFR_{t-i} + \beta_1 LHS_{t-1} \\ & + \beta_2 LHPI_{t-1} + \beta_3 LINTR_{t-1} + \beta_4 LGDP_{t-1} \\ & + \beta_5 LEXP_{t-1} + \beta_6 LINFR_{t-1} + v_t (2)\end{aligned}$$

As shown above, the first part of the equation (2) with the parameters α's denotes the short run, while the β's in the rest of the model are long run parameters. To estimate the effect of macroeconomic variables on the housing supply in the long-run, the study tested the null hypothesis of no cointegration by performing a standard F-test. The result was compared to the two asymptotic critical value bounds in this test, which were advanced by Pesaran et al. (2001). The study is able to conclude the existence of a long run relation if the calculated F-statistic is greater than the upper critical bound.

The study proceeded to the second step to scrutinise the short-run relationship after confirming the long run relationship. The study adopted the unrestricted error correction term (ECT), which represents the short run dynamics of our function.

$$\Delta LHS_t = \alpha_0 + \sum_{i=1}^{k} \alpha_{1i} \Delta LHS_{t-i} + \sum_{i=0}^{k} \alpha_{2i} \Delta LHPI_{t-i} + \sum_{i=0}^{k} \beta_{3i} \Delta LINTR_{t-i} + \sum_{i=0}^{k} \beta_{4i} \Delta LGDP_{t-i} + \sum_{i=0}^{k} \beta_{5i} \Delta LEXP_{t-i} + \sum_{i=0}^{k} \beta_{6i} \Delta LINFR_{t-i} + \gamma ECT_{t-1} + \mu_t \quad (3)$$

Where (γECT) represents the coefficient error correction term (ECT) with the speed of the adjustment parameter (γ), which tells us how quickly variables converge to the long run equilibrium. A statistically significant negative sign on the error correction term indicates a short-run link between the factors.

The third step involved performing a Granger causality test (Granger, 1988) analysis to account for the short-run association between research variables. To examine whether changes in macroeconomic variables (inflation rate, housing prices, government housing expenditure, interest rates, and economic growth) predict future changes in housing supply, a Granger causality test was used. The general form of the Granger causality test for each variable is:

$$LHS_t = \gamma \sum_{i=0}^{k} \beta LHS_{t-i} + \sum_{i=0}^{k} \alpha LIV_{t-i} + \varepsilon_t \quad (4)$$

Where independent variables (IV) are lagged by i period (t-i).
The fourth step involves residual and stability diagnostic tests to assess the robustness of the study's empirical residuals. For residual diagnostics, the study will check for normality tests by using the Jarque-Bera and Shapiro-Wilk test, serial correlation by employing the Breusch-Godfrey LM and Durbin Watson test and heteroscedasticity through the Breusch-Pagan-Godfrey test. The data was analysed using statistical software, specifically, STATA and EViews, and presented in the form of tables and graphs.

4. Results and Discussion

4.1. Unit Root Test Results

To avoid spurious and misleading regression results, the time series data were subjected to unit root analysis. To check the stationarity of the explanatory and dependent variables, the Augmented Dickey-Fuller (ADF) test was performed, and the results are shown in Table 3.

Table 3: ADF Unit Root Test Results

Variable	At level		At first difference		Order
	t-statistics	P-value	t-statistics	P-value	I(d)
HS	-1.1425	0.6902	-12.1063	0.0000	I(1)
HPI	-1.0676	0.7182	-6.1653	0.0000	I(1)
INTR	-1.8757	0.3404	-5.2584	0.0001	I(1)
GDP	2.7930	1.0000	-3.9707	0.0036	I(1)
EXP	0.0902	0.9614	-6.7225	0.0000	I(1)
INFR	-0.9375	0.3049	-8.3090	0.0000	I(1)
Note: Null Hypothesis: variable has a unit root Stationary at 1% level of significance.					

Source: Authors' estimation (2025).

For the ADF unit root test, the result shows that housing supply, housing prices, interest rate, inflation rate, economic growth and government housing expenditure are stationary at the first difference, in

other words, it is the order of one I (1) process, and they are stationary at 1%. Therefore, results obtained from the first difference test show all the variables are nonstationary, and the order of integration (I(d)) of the variables is 1. Therefore, the study cannot reject the hypothesis of a unit root due to the high p-value of the respective ADF statistics. This indicates that the series is free from the unit root and is integrated at order one.

4.2 Determination of LagLength

To select the appropriate number of lags Vector Auto regression (VAR) lag order selection model was performed to select the appropriate number of lags. In a VAR analysis, the choice of lag length is crucial because it determines how much past information is used to predict the current values of the variables. Table 4 reports VAR results.

Table 4: Maximum Lag Selection Results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	5.675251	NA	4.09e-08	0.0154	0.2637	0.1064
1	182.2971	294.3698*	5.15e-11*	-6.6808*	-4.9431*	-6.0438*
2	208.4629	36.1336	9.16e-11	-6.2125	-2.9854	-5.0296
3	239.0954	33.5498	1.59e-10	-5.9569	-1.2403	-4.2281
Note: * Indicates lag order selected by the criterion AIC: Akaike information criterion; SC: Schwarz information criterion						

Source: Authors' estimation (2025).

Accordingly, a lag of one was selected and used to estimate the effect and relationship between macroeconomic variables and housing supply in Kenya. Akaike information criterion (AIC) was chosen as the regression criterion, as presented by the minimum value (-6.6808). A lower AIC value signifies a better model, indicating more accurate prediction with fewer parameters.

4.3 Cointegration Test Results

Nonstationary variables become stationary when they are linearly joined by cointegration. This necessitates employing the Johansen cointegration test to look for any indication of cointegration among the variables that are I(1) series. Johansen's cointegration test is conducted to ensure that

the independent and dependent variables used in the regression model are related in the long run. The estimates of the cointegration test are presented in Table 5.

Table 5: Results of the Johansen Cointegration

Unrestricted Cointegration Rank Test	Trace			*Maximum Eigenvalue*	
Hypothesised		Trace	0.05	*Max-Eigen*	0.05
No. of CE(s)	*Eigenvalue Statistic*	Statistic	Critical Value	Statistic	Critical Value
None *	0.6551	125.3532	95.7536	45.7761	40.0775
At most 1 *	0.5483	79.5769	69.8188	34.1750	33.8768
At most 2	0.4007	45.4019	47.8561	22.0161	27.5843
At most 3	0.3158	23.3857	29.7970	16.3203	21.1316
At most 4	0.1513	7.0653	15.4947	7.0567	14.2646
At most 5	0.0001	0.0085	3.8414	0.0085	3.8414
Note: * denotes rejection of the hypothesis of no cointegration at the 0.05 level					

Source: Authors' computations (2025).

The Maxeigen value test and Trace test show two cointegrating equations at the 5% level in Table 5. These suggest that there is cointegration between the study variables. Thus, there was strong evidence of a long-run relationship (cointegration) between housing supply and the selected macroeconomic variables in Kenya.

4.4. Causality Test Results

Further, a lag of one was selected and used to check the association between the independent and dependent variables. Table 6 shows the pairwise Granger causality results.

Table 6: Pairwise Causality Results

Null Hypothesis:	Obs	F-Statistic	P-value	Decision	Granger
HP does not cause HS	44	2.0100	0.1638	Ho is accepted	Unidirectional
HS does not cause HP		4.5635	0.0387	Ho is	

				rejected	
INTR does not cause HS		3.8912	0.0553	Ho is rejected	Unidirectional
HS does not cause INTR	44	1.0626	0.3087	Ho is accepted	
GDP does not cause HS		15.3830	0.0003	Ho is rejected	Unidirectional
HS does not cause GDP	44	0.0004	0.9824	Ho is accepted	
EXP does not cause HS		4.4114	0.0419	Ho is rejected	Unidirectional
HS does not cause EXP	44	0.2693	0.6065	Ho is accepted	
INFR does not cause HS		0.0446	0.8338	Ho is accepted	None
HS does not cause INFR	44	0.0189	0.8913	Ho is accepted	

Source: Authors' estimation (2025).

The result shows a unidirectional causality flow from interest rate to the supply of houses. The analysis reveals that past values of interest rate significantly predict future changes in housing supply, indicating that rising interest rates can lead to increased housing supply, possibly due to the demand for houses that can push interest rates available to housing sector investors. In Kenya, during the study period, there was a unidirectional causal relationship where housing supply influenced housing prices, economic growth, and government housing expenditure. The finding reveals that past values of housing supply significantly predict future changes in housing prices, government expenditure on housing and economic growth. This result suggests that an increase in housing supply can lead to higher housing prices, economic growth, and government housing expenditure. When there is an increase in housing supply, it can meet the rising demand from a growing population or increased investment in real estate. If the demand for housing remains strong—perhaps due to factors like job growth or urbanisation—this increased supply can lead to higher housing prices, as buyers compete for available homes. However, research in Kenya indicates no causal relationship between inflation and housing supply. This suggests inflation does not directly predict changes in housing supply, nor does housing supply influence inflation, possibly due to the greater influence of other factors such as external economic conditions or monetary policy.

4.5. Regression Results

The objective was to establish short-run and long-run effects of house prices, interest rates, economic growth, government housing expenditure and inflation rates on house supply in Kenya. The regression results of the Vector Error Correction Model (VECM) estimation method of both long-run and short-run effects of selected macroeconomic variables on housing supply are presented in panels A and B of Table 7, respectively.

Table 7: Drivers of Supply of Housing

Long run estimates				Short run estimates			
Variables	Coefficient	t-statistics	Decision	Variables	Coefficient	t-statistics	Decision
HPI	0.3109	2.0774**	+SS	ΔHPI	0.0302	0.1879	+NS
INTR	-1.9255	-3.4279**	+SS	ΔINTR	-0.4634	-3.3610**	-SS
GDP	11.6300	8.3995**	+SS	ΔGDP	13.6214	1.4790	+NS
EXP	-0.7323	-3.6334**	-SS	ΔEXP	-0.3468	-1.2340	-NS
INFR	-0.7948	-4.6349**	-SS	ΔINFR	0.1952	0.8632	-NS
				ECT	-0.8119	-4.3347**	-SS
Adjusted R squared = 0.60 F-statistics = 3.23							
Jarque Bera = 0.79 (p-value) Durbin Watson =2.16							
Note: **indicate Significance at 5% when t-statistics >1.96 NS-Non-significant; SS- Statistically Significant							

Source: Authors' estimation (2025).

The VECM model result suggests that the price of houses has a positive and significant effect on housing supply in Kenya in the long run. The

increase in housing prices is significantly positively related to the housing supply. A 1% increase in housing prices correlates with a 0.31% increase in housing supply. In the long run, increased house prices will lead to an increase in the supply of houses. This means there will be increased development as house prices rise, since it enhances profitability. In the short run, the effect is minimal due to construction and planning approval lead times, meaning supply does not adjust immediately. The study's long-run effects align with the empirical research of Theuri (2013) and Chirchir et al. (2024) in Kenya and Udensi et al. (2024) in Nigeria, that the price of housing has a substantial positive effect on the number of houses delivered in developing countries. As housing prices become favourable for the producers, the number of houses increases.

Further estimates from VECM indicate interest rates have a significant negative effect on the supply of houses in the Kenyan economy in both the long run and short run. The coefficient of interest rate is -1.92, suggesting that for every 1% increase in lending interest rate, the housing supply will decrease by 1.92 % in the long run. Higher interest rates reduce the supply of housing in both the short-run and long-run. The consistent negative relationship implies that increased borrowing costs discourage investment in housing construction, either in the short-run or ultimately. Interest rates charged by commercial banks and microfinance institutions may discourage the take-up of mortgages to purchase or supply these houses (Just, 2023). Rising interest rates will cause a short-term decline in residential construction, impacting housing supply elasticity and potentially leading to increased rents despite falling residential prices (Just, 2023; Chen, 2024). In the short run, the findings are similar; in the long run, however, they differ in magnitude. The short-run result agrees with the findings of Theuri (2013) in Kenya and Chen (2024) in China that the interest rate is not statistically significant.

The study has determined from the results that economic growth has a significant positive effect on the supply of houses in the long-run. The coefficient is 11.63, suggesting that for every 1% increase in GDP, the housing supply will increase by 11.63%. Economic growth has a positive effect in the long run on the supply of housing in the sense that an increase in the economy spurs construction by raising income, investment, and demand for housing. In the short run, however, the effect is small, such that short-run changes in economic conditions may not result in instant reactions in housing supply. GDP directly determines an individual's disposable income. It is the average income per head. If it is high, that translates to high disposable incomes and

hence better housing is afforded. A low GDP leads to the development of slums and low-grade houses. The study findings disagree with Theuri's (2013) and Merga's (2022) conclusion that GDP has an inverse relationship with the supply of houses, attributed to the unequal distribution of wealth and decent houses in emerging economies.

The study's findings indicate that government housing expenditure has a significant negative long-run effect on housing supply. The coefficient of public housing spending is 0.73, suggesting that for every 1% increase in government expenditure on housing, the housing supply will decrease by 0.73%. Historical public housing spending in Kenya has negatively impacted long-term housing supply, indicating inefficiencies like the "crowding out" of private sector investment by public sector activities. It possesses an adverse but insignificant short-run effect that indicates minimal short-run influence. While public investment often boosts private investment and housing supply, some research suggests excessive public spending can lead to short-term inefficiencies and hinder private sectors grow (Merga, 2022).

The regression has shown that in long run inflation has a negative and significant effect on housing supply in the long run. The coefficient of the inflation rate is 0.79, showing that a one per cent increase in the inflation rate leads to a 0.79 per cent decrease in the housing supply. Inflation reduces the long-run supply of homes, supposedly because higher input expenses discourage new construction (Babalola, 2021). The effect in the short run is small, which suggests that supply is not highly responsive to inflationary pressures in the short run. Inflation, being the persistent increase in general prices of goods and services, influences an individual's economic power to take up the houses established in Kenya. More often than not, an individual's income remains constant despite the increase in prices. This reduces their ability to take up those new homes. Inflation, by increasing construction costs, is a primary driver of higher housing prices in developing countries. This often leads to increased interest rates, further contributing to the unaffordability of housing Increased housing supply stabilises housing prices, which moderates and holds inflationary pressures in check (Udensi, Oyama& Abbey, 2024).

However, this is not the case in the short run, where statistically insignificant effects exist. The short-run conclusion of the statistically significant result is similar to Theuri's (2013) conclusion in Kenya.

The Error Correction (ECM) findings report a coefficient of 0.81, which indicates that 81% of the deviation from the long run equilibrium in a particular year will be corrected in the subsequent period. The coefficient of determination adjusted R-squared shows that 60 per cent of the variation in the dependent factor has been explained by explanatory factors, thus showing that the data fits the regression model well.

5. Conclusion and Recommendations

The study found that the price of housing and economic growth have a significant positive effect on the number of houses delivered in Kenya in the long run. This implies an accelerated increase in the price of houses, and economic growth will translate to an increase in the number of houses supplied. However, research has indicated an inverse relationship between the number of houses supplied and the inflation rate, interest rate and government housing expenditure. In the short run, interest rates have the sole substantial impact. Kenyan housing supply is more sensitive to long-run macroeconomic stability and structural economic conditions than to short-run fluctuations. It is advised that the government look for methods to lower interest rates, inflation rates, and government housing spending in light of these findings. As a result, developers would be able to keep a healthy profit margin while home prices would decline. Lower prices and building expenses might persuade low-income workers to use short run investments or financial intermediaries to save for their homes, which would increase the demand and supply for housing in the long run. The housing stock is probably going to rise as a result of this procedure. Furthermore, macroeconomic stabilisation policies aimed at fostering an investor-friendly environment, which ultimately influences housing prices, must consider inflation and interest rates.

From the findings of the study as discussed above, the following recommendations are made: To enhance Kenya's housing supply market, policymakers should create incentives for developers through tax rebates, subsidised land, and streamlined permits. Maintaining low and stable interest rates is crucial to reduce borrowing costs for homebuyers and developers. Sustainable economic growth, driven by long-run

investments in infrastructure and job creation, will further support housing supply. Government spending should focus on efficient management and public-private partnerships for affordable housing, avoiding crowding out private investment. Additionally, effective macroeconomic policies are needed to combat inflation's negative impacts on housing. Developing financial products that facilitate affordable financing options for individuals and developers is essential for establishing a robust housing finance market in Kenya.

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