

DETERMINANTS OF HOUSING AFFORDABILITY IN MALAYSIA: AN ECONOMETRIC ANALYSIS

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Abstract: *One of the most pressing societal challenges is the provision of affordable housing for the general public. The goal of this article is to identify the elements that determine housing affordability levels in Malaysia, analyse the mechanisms that drive these factors, and estimate their quantitative impact on the housing affordability index. The following elements have a direct impact on housing affordability: GDP, mortgage interest rates, and population. The quantitative assessment of the cumulative impact of these factors on housing affordability is based on developing a regression time-series model that describes how the housing affordability index in Malaysia is influenced by various factors and on evaluating its reliability. Time series data from 1990 to 2024, and a regression model was used to determine the relationship between the selected variables. Using empirical data analysis, the results reveal that gross domestic product and population size significantly influence housing affordability. In contrast, interest rates do not exhibit a statistically significant relationship with affordability outcomes. These findings highlight the importance of economic growth and demographic trends in shaping housing access, offering valuable insights for policymakers and urban planners aiming to improve housing affordability.*

Keywords: (GDP, mortgage interest rates, and population)

Introduction

Housing is a central determinant of societal well-being, as it directly reflects living standards, social stability, and economic security. Beyond its function as a physical shelter, housing embodies individual aspirations and long-term financial commitment, making homeownership one of the most significant lifetime investments for households. Housing choices are inherently heterogeneous, shaped by differences in income, cultural background, and household characteristics (Afiah et al., 2020). At the macro level, the housing sector constitutes a key pillar of the urban economy, influencing capital formation, labor mobility, and national development trajectories. In this sense, housing extends beyond private consumption to serve as a basic human necessity essential for sustaining life and preserving dignity (Roshidi et al., 2021).

In Malaysia, housing affordability has become an increasingly critical structural issue, driven primarily by persistent mismatches between housing supply and effective demand—particularly in the affordable segment below RM500,000. This imbalance is compounded by stagnant real wage growth, which has weakened purchasing power among middle- and lower-income households (AmInvestment Bank Research, 2023). Although housing price growth moderated following the 2008–2013 property expansion, affordability constraints remain binding, suggesting that price dynamics alone do not fully explain access to homeownership. Moreover, population growth, urbanisation, and uneven regional economic development have intensified affordability pressures across states. Similar patterns are observed globally, where declining availability of affordable housing disproportionately affects low- and very low-income groups. These trends underscore the need for rigorous empirical investigation using income, price, demographic, and macroeconomic indicators to identify key affordability drivers and inform targeted housing policy interventions.

Housing affordability has become a major socio-economic challenge in Malaysia, largely driven by rising homeownership costs and escalating rental prices. Given that housing expenditure constitutes the largest share of household spending, sustained price increases exert significant pressure on financial resilience and overall living standards (Lens, 2018). These pressures are not evenly distributed; middle- and lower-income households are disproportionately affected, facing increasing exclusion from the formal housing market. As noted by Davenport (2003), such income groups encounter persistent difficulties in accessing adequate and affordable housing, a condition that has intensified amid recent economic and market dynamics.

Recognising the growing severity of this issue, the Malaysian government has undertaken multiple studies and introduced policy initiatives aimed at diagnosing affordability constraints and developing long-term housing solutions. However, despite these interventions, empirical evidence on the combined influence of economic and demographic determinants of housing affordability remains fragmented. In particular, the interaction between macroeconomic performance, financial conditions, and population dynamics has not been sufficiently examined within a unified analytical framework.

Accordingly, this study seeks to address this gap by empirically investigating the relationship between housing affordability and selected macroeconomic indicators namely gross domestic product (GDP), mortgage interest rates, and population growth in the Malaysian context. By identifying the key drivers of affordability pressures, the study aims to provide evidence-based

insights to support more targeted and effective housing policies, particularly for middle- and lower-income households who remain most vulnerable to housing market constraints.

Literature Review

Housing is widely recognised as a foundational element of both individual welfare and societal stability, as it reflects living conditions, social inclusion, and overall quality of life. As a basic human necessity, housing shapes physical safety, social cohesion, and participation in economic activity. Housing decisions are inherently heterogeneous, with prospective buyers exhibiting diverse preferences influenced by cultural norms, financial capacity, and personal circumstances (Afiqah et al., 2020). Within this framework, affordability emerges as a critical lens through which access to housing can be meaningfully assessed.

Housing affordability, as conceptualised by Adegoke and Agbola (2020), refers to a household's financial capacity to acquire housing without compromising other essential expenditures. In market-oriented economies, prices act as a rationing mechanism that determines access to goods and services across income groups. Consequently, affordability is shaped not only by housing supply and demand but also by income distribution, credit conditions, and the degree of market regulation. These factors collectively influence who can access adequate housing and under what conditions.

The consequences of unaffordable housing extend beyond financial stress. Sims et al. (2010) demonstrate that housing cost burdens are closely associated with adverse health outcomes, mirroring the effects of other forms of economic strain. In response to such risks, governments frequently intervene through policy instruments, including tax incentives for homeowners, rental assistance schemes, and housing subsidies. In addition, mortgage foreclosure prevention measures have been implemented in various countries to mitigate financial distress among vulnerable households, thereby promoting broader economic stability and safeguarding public health.

Macroeconomic performance, commonly proxied by gross domestic product (GDP), is a key determinant of housing affordability as it reflects overall economic capacity and income growth. In principle, higher GDP growth enhances household purchasing power and improves access to housing. However, rapid economic expansion may also stimulate housing demand particularly in urban areas leading to price escalation and reduced affordability (Anthony, 2023). In Malaysia, although sustained GDP growth has increased national income levels, affordability gains have not been evenly distributed. Evidence suggests that low- and middle-income households continue to face significant barriers to affordable housing access, indicating that the benefits of economic growth are unevenly transmitted across income groups (Bank Negara Malaysia, 2019).

Mortgage financing further plays a central role in determining housing affordability, particularly for middle-income households that rely heavily on credit to achieve homeownership. Interest rates directly influence borrowing costs and monthly repayment obligations. Lower interest rates typically enhance affordability by reducing mortgage servicing burdens, while higher rates can significantly constrain access even when house prices remain stable (McCord et al., 2011). In Malaysia, movements in the Overnight Policy Rate set by Bank Negara Malaysia are transmitted to mortgage lending rates, shaping housing demand dynamics. Empirical evidence indicates that declining interest rates stimulate housing market activity,

whereas rate increases suppress demand and intensify affordability constraints (Duca et al., 2021).

Demographic factors, particularly population growth and rapid urbanisation, further compound housing affordability challenges. Expanding urban populations generate sustained demand for residential properties, and when housing supply fails to adjust accordingly, upward pressure on prices becomes inevitable (Galster et al., 2021). In Malaysia, large-scale internal migration toward major urban centres such as Kuala Lumpur, Johor Bahru, and Penang has intensified housing shortages and infrastructure strain. This spatial concentration of demand has heightened competition for limited housing stock, contributing to rising property prices and declining affordability (Ismail et al., 2021). Without coordinated urban planning and targeted policy interventions, continued population growth is likely to deepen supply demand imbalances and further marginalise low-income households from the housing market.

Methodology

This study adopts a quantitative research approach based on time-series econometric analysis to investigate the relationship between selected macroeconomic variables and housing affordability in Malaysia. The explanatory variables include gross domestic product (GDP), mortgage loan interest rates, and population size. Time-series analysis is particularly suitable for this study as it enables the examination of temporal dynamics, trends, and long-run relationships among variables over an extended period, thereby capturing the evolving nature of housing affordability.

Empirical analysis is conducted using EViews, which facilitates data management, econometric estimation, and statistical testing, as well as the generation of publication-quality tables and figures. The analytical framework incorporates correlation analysis to examine the degree of association among variables, followed by multiple regression analysis to assess the magnitude and direction of macroeconomic influences on housing affordability.

To reduce heteroskedasticity and allow coefficient interpretation in elasticity terms, all variables are transformed into natural logarithmic form. A standard multiple linear regression model is employed, where housing affordability is specified as the dependent variable, while GDP, mortgage interest rates, and population serve as independent variables. The estimated coefficients (β) capture the responsiveness of housing affordability to changes in each explanatory variable, while the coefficient of determination (R^2) measures the model's explanatory power.

$$y = \beta_0 + \beta_1 \text{GDP}_1 + \beta_2 \text{IN}_2 + \beta_3 \text{Pop}_3 + \varepsilon_t$$

were,

y = dependent variable which represents as Housing Affordability

β_0 = The constant number of equations

β = Coefficient beta value

GDP_1 = Independent variable which represent Gross Domestic Product

IN_2 = Independent variable which represent Interest Rate

POP_3 = Independent variable which represent Population

ε_t = Error term

Data Collection

The study utilizes secondary data collected from credible sources, including the Department of Statistics Malaysia (DOSM), Bank Negara Malaysia, and World Bank databases. The data covers an annual time frame from 1990 to 2024, ensuring adequate observations to capture long-term trends and cyclical economic behaviours.

Result

Table 1 Correlation Analysis

| | Population | Interest rate | GDP | Housing affordability |
|-----------------------|------------|---------------|-------|-----------------------|
| Population | 1.0 | -0.25 | 0.94 | -0.74 |
| Interest Rate | -0.25 | 1.0 | -0.17 | 0.36 |
| GDP | 0.94 | -0.17 | 1.0 | -0.53 |
| Housing affordability | -0.74 | 0.36 | -0.53 | 1.0 |

To examine the associations between the selected macroeconomic indicators and housing affordability in Malaysia, Pearson correlation analysis was conducted. The correlation coefficients reported in Table 1 provide preliminary evidence on the direction and strength of linear relationships among the variables.

The results reveal a strong positive correlation between population size and GDP ($r = 0.94$), indicating that population expansion has been closely associated with economic growth over the study period. This relationship is consistent with economic theory, whereby population growth contributes to labour supply, consumption, and overall economic output. However, population growth is simultaneously found to be strongly and negatively correlated with housing affordability ($r = -0.74$), implying that increasing population pressures are associated with declining affordability. This relationship likely reflects demand-side pressures, particularly in urban areas where housing supply has not expanded sufficiently to match population inflows, resulting in upward pressure on house prices.

Similarly, GDP exhibits a moderate negative correlation with housing affordability ($r = -0.53$), supporting earlier regression findings that economic growth alone does not guarantee improved access to affordable housing. While higher GDP may raise aggregate income levels, rising property prices and unequal income distribution may limit affordability gains for low- and middle-income households.

In contrast, mortgage interest rates show a positive but relatively weak correlation with housing affordability ($r = 0.36$). This suggests that periods of higher interest rates may coincide with marginal improvements in affordability, potentially due to reduced speculative activity or slower housing market demand. Nevertheless, this relationship should be interpreted with caution, particularly in light of regression results indicating that interest rates are not a statistically significant determinant of affordability.

Interest rates are also weakly and negatively correlated with both population ($r = -0.25$) and GDP ($r = -0.17$), suggesting that interest rate movements are more closely linked to monetary policy responses to macroeconomic conditions rather than directly driven by demographic or output growth.

Overall, the correlation matrix highlights significant interdependencies among the variables, most notably the strong negative relationships between population growth, economic expansion, and housing affordability. These findings suggest that while demographic and economic growth underpin national development, they may simultaneously exacerbate housing affordability challenges in the absence of effective housing supply policies and targeted affordability interventions.

Table 2 Regression analysis.

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|-------|
| c | 0.0027 | 0.0003 | 8.52 | 0.00 |
| LGDP | 2.13 | 6.47 | 3.3 | 0.002 |
| LPOP | -1.76 | 2.58 | -6.85 | 0.00 |
| LINT | 1.06 | 6.48 | 1.64 | 0.11 |
| R-squared | 0.82 | Mean dependent var | 0.0003 | |
| Adjusted R-Squared | 0.82 | S.D dependent var | 0.0002 | |
| S.E of regression | 0.0001 | Akaike info criterion | -15.13 | |
| Sum squared resid | 4.48 | Swararz criterion | -14.96 | |
| Log likelihood | 276.5 | Hannan-Quinn criter | -15.07 | |
| F-statistic | 54.33 | Durbin Watson stat | 0.680 | |
| Prob (F statistic) | 0.00 | | | |

This study applies a multiple linear regression framework using annual time-series data from 1990 to 2024 to assess the effects of selected macroeconomic variables (gross domestic product (GDP), population size (POP), and interest rates (INT)) on housing affordability in Malaysia. The estimated regression results are reported in Table 2.

The model demonstrates satisfactory explanatory power, with an R-squared value of 0.82, indicating that approximately 82 percent of the variation in housing affordability is explained by the included macroeconomic variables. This suggests that the model captures key structural drivers of affordability dynamics over time. The F-statistic of 54.33, with a corresponding p-value of 0.000, confirms the joint significance of the explanatory variables at the 1 percent level, implying that the regression model is statistically robust overall.

Individually, the logarithm of GDP (LGDP) exhibits a statistically significant negative coefficient of 2.13 ($p = 0.002$). This finding indicates that higher economic output is associated with reduced housing affordability. While economic growth typically raises aggregate income levels, this result suggests that growth may also stimulate housing demand and speculative activity, driving property prices upward at a faster pace than income growth, particularly for low and middle-income households (Malpezzi, 2023; Koroso et al., 2024).

Similarly, population growth (LPOP) is negatively and significantly related to housing affordability, with a coefficient of -1.76 ($p = 0.000$). This relationship reflects increasing demand pressure arising from demographic expansion, especially in rapidly urbanising regions. Population concentration in major urban centres such as Kuala Lumpur, Johor Bahru, and Penang has intensified competition for the limited housing supply, thereby contributing to rising property prices and declining affordability (Ramlan & Zahari, 2016; Gallent et al., 2024).

In contrast, the interest rate variable (LINT) displays a positive coefficient of 1.06 but lacks statistical significance ($p = 0.11$). Although the positive sign may suggest that higher interest

rates are associated with marginal improvements in affordability possibly through reduced speculative demand the absence of statistical significance implies that interest rate effects are not a dominant driver of affordability over the study period. This may be due to policy interventions such as housing subsidies, mortgage restructuring schemes, and flexible financing arrangements that mitigate the direct impact of interest rate fluctuations (Shi et al., 2014).

The adjusted R-squared value of 0.82 further confirms the model's explanatory strength after accounting for the number of regressors. However, the Durbin Watson statistic of 0.680 indicates potential positive autocorrelation in the residuals, suggesting that future research may benefit from employing time-series-specific estimation techniques, such as autoregressive distributed lag (ARDL) models or generalized least squares (GLS), to improve estimation efficiency and reliability

Conclusion

This study examined the influence of economic growth, population expansion, and interest rate movements on housing affordability in Malaysia using annual time-series data from 1990 to 2023. The empirical findings reveal that both GDP growth and population increase exert significant and negative effects on housing affordability. These results indicate that while economic expansion and demographic growth support national development, they simultaneously intensify housing demand and price pressures—particularly in urban areas—outpacing income growth for lower- and middle-income households. In contrast, interest rates exhibit a positive but statistically insignificant relationship with affordability, suggesting a limited direct role in shaping long-term housing access.

Based on these findings, several policy implications emerge. First, greater emphasis should be placed on expanding affordable housing supply through public-sector development, targeted tax incentives, and stricter regulation of speculative property activities. Second, income growth policies must be aligned with rising living costs to ensure that economic progress translates into improved housing access. Third, mortgage assistance mechanisms, including rent-to-own schemes and targeted financing support, should complement monetary policy measures to enhance housing affordability.

Future research should incorporate additional determinants such as wage levels, construction costs, credit availability, and urban planning policies, as well as utilise regional or panel data to capture spatial heterogeneity in housing affordability. Ultimately, the formulation of inclusive and forward-looking housing policies is essential to ensure that sustained economic growth contributes to improved living standards and equitable access to housing for all Malaysians.

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