Examining the Impact of Macroeconomic Factors on Housing Prices in Malaysia

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ABSTRACT

This research investigates the influence of macroeconomic variables on property prices in Malaysia, specifically analyzing the correlations among gross domestic product (GDP), interest rates, and inflation from 1988 to 2022. Economic upheavals, including the COVID-19 epidemic, have exacerbated the Malaysian housing market's difficulties, which play a crucial role in the country's economy. This study uses econometric models to examine the impact of macroeconomic factors on the Housing Price Index (HPI), including both short-term and long-term effects. Its goal is to fill gaps in the current literature. The results demonstrate a notable association between the rise of the Gross Domestic Product (GDP), interest rates, and housing prices, emphasizing the need for policymakers to monitor these interconnections regularly. Moreover, the research underlines the need for focused governmental interventions to enhance housing affordability and stability of the market, especially in metropolitan regions undergoing rapid expansion. This study offers valuable insights into regional variations in housing market reactions to macroeconomic shifts by combining case studies from different areas in Malaysia. This research ultimately enhances our knowledge of the Malaysian housing market. It provides valuable advice for stakeholders who need to navigate the fluctuations in home prices in a dynamic economic landscape.

Keywords: Price, Macroeconomic, Volatility, Dynamic

INTRODUCTION

Housing Market

The property market's performance is critical to Malaysia's economy. The demand for homes and the impact of the economy on the real estate market are both reflected in home prices. Over the past several years, Malaysian property prices have shifted significantly. Interest rates, inflation rates, and GDP growth have all been impacted. According to Isyanto et al. (2022), household savings, government expenditure, private consumption, and GDP significantly impact Malaysian property prices. This influences both government decision-making and housing market analysis. Understanding how these broad elements impact house prices is crucial for legislators, investors, and other interested parties who wish to comprehend how the housing market functions.

This research study's primary objective is to investigate the impact of macroeconomic factors on Malaysian house prices, with a particular emphasis on identifying the primary price fluctuations and their implications for the economy. Econometric models and mathematical research establish a correlation between the Housing Price Index (HPI), interest rates, inflation rates, and GDP growth. This research will also investigate the impact of the COVID-19 pandemic on Malaysian home prices, considering the unprecedented global crisis's impact on macroeconomic factors and the subsequent impact on the real estate sector. In Malaysia, the impact of GDP, the exchange rate, unemployment, and wages on house prices was more apparent during the COVID-19 pandemic (Zulkarnain & Nawi, 2022). The study compares the prices of homes before and after the COVID-19 pandemic

to determine the housing market's stability in uncertain economic conditions or external disruptions. Zulkarnain et al. (2023) asserted that COVID-19 substantially impacts Malaysian housing prices, as it has a strong and positive correlation with GDP and interest rates. This increases the cost of accommodation and jeopardizes the nation's economic stability.

The study's objective is to demonstrate the intricate relationship between macroeconomic factors and housing prices to assist in formulating decisions and policy changes that will promote a stable and enduring housing market in Malaysia. While research has been done to explain the connection between macroeconomic variables and property prices in Malaysia, a particular observational study to look at these elements' consequences during economic shocks like the COVID-19 outbreak is still lacking.

Furthermore, rather than delving deeper into the long-term patterns and structural changes in Malaysia's housing market, earlier research frequently concentrated on short-term correlations. By using thorough econometric techniques to examine the short and long-term impacts of GDP growth, interest rates, and inflation on housing prices nationwide and taking into account the difficulties brought on by the epidemic, this research should attempt to close this knowledge gap.

Statement of Problem

Changes in housing prices precipitated by macroeconomic factors such as GDP growth, inflation, and interest rates may adversely affect the Malaysian housing market. Policymakers, investors, and other individuals in the real estate industry who aspire to enhance market stability and affordability must understand the intricate relationships between these factors and property prices. Nevertheless, the study's deficiencies render it impossible to understand the impact of these macroeconomic factors on housing prices in Malaysia, particularly during the COVID-19 pandemic.

Zulkarnain et al. (2023) used multiple regression modeling to identify a statistically significant and positive correlation between Malaysia's GDP, interest rates, and property prices. This investigation addresses these deficiencies by examining the evolution of GDP growth, interest rates, inflation rates, and housing prices over time. It will focus on identifying the primary factors contributing to price fluctuations and their implications for the Malaysian housing market. Borrowing money for a mortgage is a more advantageous financial decision when interest rates are minimal.

If interest rates decrease, purchasers can secure larger loans and even place higher bids on properties due to the reduced monthly mortgage payments. According to Musaddad et al. (2023), a direct correlation exists between a residence's expense and rental rates. Home prices rise in tandem with rental rates, making them less affordable. The increased availability of credit could result in more individuals seeking to purchase residences, increasing prices. The inflation rate indicates the extent to which the prices of products and services have increased over time.

Government policies that reduce prices or stimulate economic growth can indirectly impact the housing market. Inflation rates may be influenced by the implementation of budgetary measures or the modification of monetary policy. These plans could impact the property market and costs that were not anticipated.

Relevant demographic variables, such as population growth rates, age distribution, household composition, and migration patterns, must be considered to comprehensively analyze the effects of macroeconomic factors on housing prices in Malaysia. This is because these factors significantly impact market dynamics and housing demand. Demographic changes that impact housing demand must be considered while analyzing the macroeconomic issues affecting home costs. Malaysia's population is expected to increase by 1.06% in 2024 after growing by 1.09% in 2023. This consistent population expansion emphasizes the growing need for housing and the need to comprehend how economic factors and demographic changes combine to shape the housing market.

REVIEW OF LITERATURE

Numerous studies have examined the Malaysian housing market, primarily identifying the macroeconomic

factors that influence property prices in the country. Numerous studies have demonstrated that the real estate market is significantly influenced by GDP growth, interest rates, and inflation rates. The Housing Price Index (HPI) is a critical indicator of the housing market's performance, demonstrating the interaction between supply and demand. The HPI is being examined at the regional level in light of the alterations that the COVID-19 pandemic has induced.

The research also identifies the loan market's vulnerable areas where COVID-19 could potentially impact (Allen-Coghlan et al., 2020). Tripathi (2019) stated in a comprehensive international study that the government should modify monetary policies, including inflation and money supply, to maintain the stability of real estate prices. The study employed the random-effects model. Khoo et al. (2019) investigated the housing prices in Malaysia and concluded that the government should take additional measures to maintain cost stability to prevent significant inflation. Economic and financial activity are maintained at a reasonable level by stable prices. One straightforward way to illustrate this is that a price stability plan maintains inflation at a low level. For instance, Rangel et al. (2023) discovered that the cost of living in Malaysia varies from one state to another. Since 2010, housing affordability has declined, and most housing categories are now unaffordable for millennials, who are the heads of low-income families. Not all regions have affordable living arrangements for the wealthy.

The GDP growth rate is an exceptional indicator of the economy's health. At the same time, the GDP per capita is an exceptional means of observing the evolution of an individual's quality of life (Liu & Ma, 2021). Generally, it is advantageous for businesses and employees when the GDP increases, mainly when inflation is not a concern. If financial institutions simplified the process of obtaining credit, they could reduce the interest rates on loans and stimulate current and future economic activity. If interest rates rise, individuals' net worth will decrease due to increased debt and the subsequent decline in house prices.

Filotto et al. (2018) discovered that changes in the house price index (HPI), mortgage shocks, and GDP itself positively impact short-term GDP fluctuations. Zulkarnain et al. (2023) observed that the price of private real estate gradually increased with the GDP. Despite the COVID-19 crisis, property prices have continued to decline until 2022, both during the crisis and in the following years. The cost of these homes is contingent upon the number of potential buyers and the availability of units in a particular location. Kaulihowa and Kamathi (2019) employed the autoregressive conditional heteroskedastic and generalized autoregressive conditional heteroskedastic models to ascertain the volatility of house prices in Namibia. The vector error correction model analyzed the causal relationships and factors. It has been discovered that the prices of houses in Namibia are constantly fluctuating. Additionally, it was determined that the primary factor influencing house prices was the volatility of GDP in the past. Additionally, there is a one-way relationship between GDP and fluctuations in property prices. The same conclusion was reached by Sunde and Muzindutsi (2017): the house price index in Namibia is significantly influenced by the economic growth rate.

Lowering interest rates can keep home prices from returning to where they belong, raising the risk of a housing bubble (Lin & Tsai, 2021). A rise in interest rates is often linked to a drop in home demand, affecting the housing price index. As the interest rate increases, the cost of getting money will increase, which may discourage buyers who wish to purchase. As a result, fewer people would want to buy homes. Lim and Lau (2018) examined the same subject with more factors. They examined how the relationship between Malaysian home prices, home loans, building output, and interest rates changed over time.

According to Kagen (2018), the return on investment increases when interest rates decrease, as borrowers are only required to repay a portion of the borrowed interest. This suggests that investors may be able to generate additional revenue from both short-term and long-term acquisitions by obtaining a loan from a bank with reduced interest rates. Conversely, purchasers may withdraw their funds and allocate them to the stock market in anticipation of a more favorable return. In 2023, a study conducted in Kabiné found no short-term correlation between the property price and the loan rate, following the principle of all other things being equal. Ensuring that interest rate risk is appropriately distributed to stabilize the economy is imperative. In the long term, Yusof et al. (2023) found that Malaysia's interest rate and the house price index (HPI) are inaccurately associated. The research revealed that the house price index (HPI) negatively correlates with interest rates, indicating that house prices tend to decline as interest rates rise. Conversely, Lin and Tsai (2021) demonstrate that they substantially impact the formation and change of house prices rather than solely on the prices themselves.

It is commonly asserted that the prices of products and services are increasing, leading to a decrease in the value of money. This phenomenon is commonly referred to as inflation. Typically, a robust and enduring correlation exists between inflation and housing prices. The expenses associated with materials, labor, and other resources required for a construction project escalate due to inflationary price increases (Kanchana & Sukumaran, 2020). The complex relationship between inflation rates and housing values may fluctuate for various reasons. Low inflation is typically linked to an increase in housing values. Low inflation may indicate economic growth and increased demand for housing, leading to higher prices. Consequently, excessive inflation might have a detrimental impact on the housing market. Prospective homebuyers may encounter more difficulty in purchasing a home during periods of high inflation. Significant inflation diminishes the purchasing power of the currency. When there is substantial inflation, interest rates tend to rise. This might lead to an increase in borrowing expenses for those looking to purchase homes, which could ultimately result in a slowdown of the housing market. When examining inflation using the Consumer Price Index (CPI), it becomes evident that it substantially and positively impacts long-term housing prices (Zaki, 2021).

The study analyzed the impact of Malaysia's macroeconomic determinants on housing prices, both in the short-term and long-term, using the autoregressive distributed lag (ARDL) approach inside a constrained error correction model (ECM). The error correction model (ECM) employs the ordinary least squares approach to analyze short- and long-term fluctuations. It includes a component for rectifying errors by considering short-term adjustments to long-term equilibrium. In their study, Kok et al. (2018) found that there was a widespread belief that inflation and interest rates would rise with increases in property values. This might attract foreign capital and enhance the coin's value. The exorbitant expenses associated with land and construction supplies resulted in a decline in housing prices following the COVID-19 epidemic, mainly due to the worldwide economic downturn. For instance, the annual inflation of the economy should result in consistent fluctuations in the maximum price of a house, as this impacts the prices of products and land. The citation is from Thaker and Ariff (2020).

A significant demographic aspect impacting housing demand is the size and makeup of households. Different household forms, including nuclear, extended, and single-person homes, and differences in the number of people living in each family greatly influence the demand for different kinds of housing. For example, larger residences with several bedrooms may become more necessary as the number of nuclear families rises, whereas a rise in single-person households may boost the demand for smaller, more inexpensive housing units (Smith & Smith, 2020; Johnson, 2019). Furthermore, alterations in family structures or an aging population may influence housing needs and preferences due to changes in household composition (Lee & Smith, 2021). Policymakers and real estate developers must comprehend these dynamics to maintain market stability and affordability by matching the housing supply with the populace's changing requirements (Brown, 2022).

METHODOLOGY

This study implemented a quantitative research method. The design was used to determine the relationship between price and macroeconomic factors. The structure and models were made using the life-cycle theory and the overlapping generation theory.

The variables' descriptions are stated below. Table 1 shows the sources of data for each variable and the information symbols used in the equation model.

Table 1. Determinants of macroeconomic factors.

No.	Determinants	Variable Name
1	Housing Price Index	HPI
2	Gross Domestic Product	GDP
3	Interest Rate	ITR
4	Inflation Rate	IFR

ARDL Model

The model was transformed into a Bound Testing Approach

$$\Delta LNHPI = \beta_0 + \theta_0\ \mathrm{LNGDP}_{t-1} + \theta_1\ \mathrm{LNITR}_{t-1} + \theta_2\ \mathrm{LNIFR}_{t-1} + \sum_{i=1}^{a} \beta_1\ \Delta\mathrm{LNGDP}_{t-1} + \sum_{i=0}^{b} \gamma_i\ \Delta\mathrm{LNITR}_{t-1} + \sum_{i=0}^{c} \delta_i\ \Delta\mathrm{LNIFR}_{t-1} + \mathrm{v}_t$$

Δ is the first difference operator, and vt is a term for white noise. It is possible to think of the final model in the equation above as an ARDL of order ($O\ m\ i\ b\ u$). According to the model, the success of the house price index (HPI) is largely determined by its past values, which means that it is affected by other changes or shocks. The long-run elasticities can be found by dividing the coefficient of the one-lagged dependent variable by the coefficient of the one-lagged explanatory variable plus a negative sign. The first differenced variables' coefficient shows the short-term impact. In the long-term relationship, the null of no cointegration is set by:

$H0$: $\theta0=\theta1=\theta2=\theta3=\theta4=\theta5=0$ (there is no long-run relationship)

Against the alternative hypothesis

$H1$: $\theta0\neq\theta1\neq\theta2\neq\theta3\neq\theta4\neq\theta5\neq 0$ (there is a long-run relationship exists)

The overall distribution of this F-statistic is not normal, though, no matter if the variables are I (0) or I (1). Narayan (2004) listed two sets of suitable critical values for a study with a small sample size of 30 to 80 observations. One set thinks all variables are I (1), and the other set believes they are all I (0). The null hypothesis can not be rejected if the F-statistic is less than the cutoff level. The null hypothesis is false if the F-statistic is less than or equal to the upper bound level. This means that there is cointegration. However, if it falls within the band, the effect is unclear.

The unit root test is the initial stage in examining the connection between macroeconomic factors and home prices. However, Perron (1989) found that a standard unit test becomes biased towards a false null hypothesis of a unit root when structural breakdowns exist on trend-stable data. As a result, the current study used a unit root test that allows for a single break, with the breaking point date chosen in accordance with the lowest Dickey-Fuller t-statistic. Furthermore, the model assumes that the data does not trend and breaks gradually.

The Autoregressive Distributed Lag Model (ARDL) is the foundation for this study's cointegration test. The ARDL model can look at models with structural breaks and causal relationships for variables in different integration orders (Pesaran & Pesaran, 1997); it can also fix the problem of autocorrelated error that the finite distributed lag model has (Hill et al., 2008). According to Pesaran and Shin (1999), regardless of whether the regressors are all I(0) or I(1), the ARDL estimate for long-run coefficients is likewise consistent.

The hypotheses are assessed or tested by comparing the estimated F-statistic of the bound test with two critical bound values for a given significance level, namely lower bound and upper bound critical values, obtained from Pesaran et al. (2001). The null hypothesis is rejected when the value of the F-statistic is higher than the upper critical bound, and the rejection of the null hypothesis indicates there is a long-run relationship between the housing price and macroeconomic factors. On the other hand, if the F-statistics is smaller than the lower critical bound, then the null hypothesis failed to be rejected and indicated no significant long-run relationship between the variables. However, the F-statistic between the variables is inconclusive or undetermined in the long run.

The short-run relationship is obtained from an Error Correction Model (ECM), as shown in Equation (2), with Error Correction Terms (ECT) representing the speed of adjustment for the model to reach equilibrium or a long-run relationship. Based on Engle and Granger (1987), the error correction model shows the dependent variables' reaction and indicates the proportion or fraction of the disequilibrium from one period that is corrected in the

next period.

$$\Delta y_t = \alpha + \sum_{i=1}^{p} \theta_i \, \Delta y_{t-i} + \sum_{i=0}^{q} \beta_i \, \Delta x'_{t-i} + \lambda_1 ECT_{t-1} + \varepsilon_t$$

Where $ECT_{t-1} = \varepsilon_{t-1} = y_{t-1} - \alpha - \beta x'_{t-1.}$

A least squares estimation is carried out to analyze the ECM model, and the number of lags in the model is determined based on the lowest Schwarz Criteria value not equal to 0, then, it shows that x' is significant in influencing y in the short run. This implies that a short-run relationship exists between housing prices and macroeconomic determinants.

The initial step is to conduct a summary analysis. Next, the stationarity test is conducted using the Phillips-Perron (PP) unit root test and the Augmented Dickey-Fuller (ADF) test. Subsequently, various evaluations are implemented to determine whether the econometric model is well-suited. These include the Ramsey Regression Equation Specification Error Test (Ramsey RESET), the Cumulative Sum (CUSUM) test, the Cumulative Sum of Square (CUSUMSQ) test, the Breusch-Pagan-Godfrey (BPG) test, and the Lagrange Multiplier Serial Correlation (LMSC) test. Next, Autoregressive Distributed Lag (ARDL) estimation methods are employed to investigate the short- and long-term relationships between the dependent variable and each of the independent factors. Lastly, the forecast error variance decomposition, impulse response function, and Granger causality test are discussed.

The numerous methodological limitations that this study acknowledges may influence the robustness of the findings. A significant limitation is the potential presence of structural gaps in the time series data, particularly those caused by the COVID-19 pandemic. If not properly considered, structural disruptions can result in biased estimates, disrupting the relationships between macroeconomic factors and housing prices.

First proposed in 1969, Granger causality is a statistical hypothesis test used to determine if a one-time series variable may be used to predict another economic variable. Additionally, it is regarded as a technique for assessing the source and impact of time-series data. Simultaneously, a study of the causal link is necessary to forecast the time series' future value by identifying the reason behind the time series' own fluctuations. The second goal is to analyze the causal link structures between the variables HPI and the determinants (GDP, ITR, and IFR) in order to identify the cause of HPI. The Granger causality technique is applied because time-series data and the causation link are involved.

The Vector Autoregression Lag Order Selection Criteria are applied before the Granger Causality Test to determine the ideal lag order number for the test. A common practice is to choose the number of lags to be included using an information criteria, such as the Schwarz Information criteria (BIC) or the Akaike Information Criterion (AIC). If a t-test is significant, each individual lagged value of one of the variables is kept in the regression, and the values of the other lagged variables increase the F-test model's explanatory power collectively.

If the regression has not preserved an explanatory variable's lagged values, the null hypothesis of no Granger causation is not rejected. Granger Causality is a technique that determines if one or both of the Granger variables cause the other. One-way association occurs when just one variable Granger causes the other, or two-way association occurs when each variable Granger causes the other.

Conceptual Framework

To demonstrate how these factors affect housing prices in Malaysia, the conceptual framework shown in Figure 1 shows the proposed relationships between the Housing Price Index (HPI) and the main macroeconomic determinants, namely GDP, ITR, and IFR.

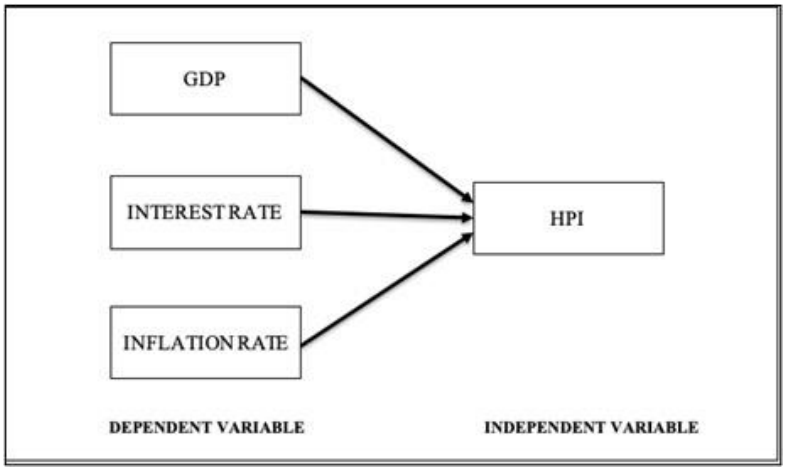

Figure 1. Conceptual Framework

RESULT ANALYSIS

The unit root test in this research enables a single structural break, with the Schwarz criterion determining the number of delays. The real gross domestic product, interest rate, and inflation rate are stationary at the first difference, or I(1), as indicated by the results in Table 2. Conversely, the house price is stationary at the I(0) level. The ARDL model is justified in its application to the long-term analysis of the relationship between housing prices and macroeconomic factors due to the combination of stationary levels of the variables.

Table 2: Unit root test

	ADF Unit Root Test	
Variable	At Level	At 1st Difference
HPI	-1.6335 (0)	-4.787 (0)***
GDP	-2.703 (0)	-4.021 (1)*
INR	-4.787 (0)***	-7.084 (1)***
IFR	-4.683 (0)***	-8.699 (0)***

Note: 1. ***, ** and * are 1%, 5% and 10% of significant levels, respectively. 2. The optimal lag length is selected automatically using the Schwarz Info Criteria (SIC) for ADF test.

The Schwarz criterion determines the number of delays, while the unit root test employed in this research allows for a single structural break. The results in Table 2 indicate that the real gross domestic product, interest rate, and inflation rate are stationary at the first difference, or I(1). In contrast, the dwelling price remains constant at the I(0) level. The ARDL model is justified in its application to the long-term analysis of the relationship between housing prices and macroeconomic factors as a result of the combination of stationary levels of the variables.

Table 3: Long-run relationship between housing price and macroeconomic movement

ARDL Model (4,4,1,3,3,1)		
F-Statistic: 18.849998		
Critical Value	Lower I(0)	Upper (1)
10%	2.37	3.2

5%	2.79	3.67
1%	3.65	4.66
Breusch-Godfrey Serial Correlation LM Test	F-statistic	4.5485
	Prob. Chi-Square(2)	0.0046
Breusch-Pagan-Godfrey Heteroskedasticity	F-statistic	0.5563
	Prob. Chi-Square(11)	0.7575
Ramsey RESET Test	F-statistic	6.05
	Probability	0.9939

Note: 1. The long-run relationship between Housing Price and macroeconomic factors is analyzed based on the Bounds test of cointegration with hypothesis null, assuming no correlation between variables. 2. The model includes a constant term while the breaking point is treated as a fixed regressor.

The joint significance of the regressors in explaining the housing price in Malaysia in the long run is analyzed using the bounds test, which is based on the ARDL model, as illustrated in Table 3. It has been determined that the F-statistics exceed the upper critical bound at any significance level, which implies that the null hypothesis of no cointegration between variables in the model is rejected. This suggests that the macroeconomic variables are jointly influential in shaping the prices of houses in the country. It is clear from the diagnostic tests that the model is devoid of heteroskedasticity and does not exhibit serial correlation, as demonstrated by the Breusch-Pagan-Godfrey test. On the other hand, the Ramsey RESET test indicates that the cointegration model is accurately specified.

Note: The number of lags for the independent variables in the model is selected based on the lowest Schwarz info criterion value, with the maximum number of lags set to four.

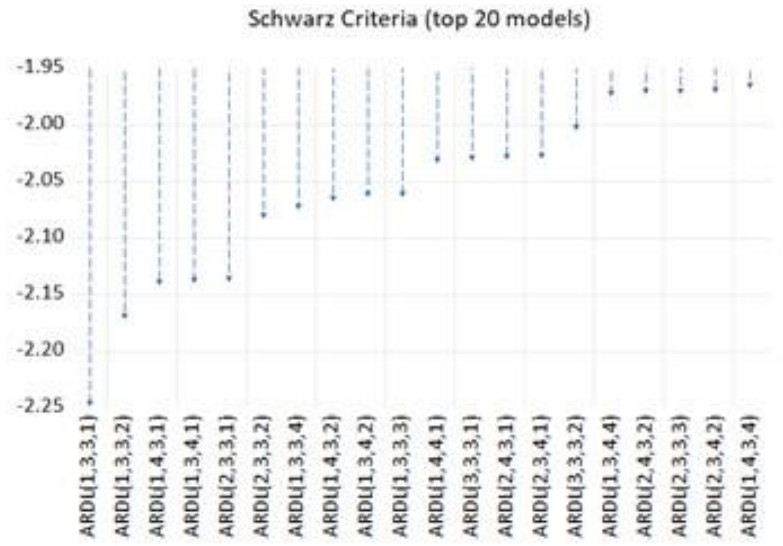

Figure 2. ARDL lag selection criteria

The relationship and correlation level between the variables in Malaysia were determined through correlation analysis, as illustrated in Table 4. The results indicate a robust correlation between the housing price index and other variables. The real gross domestic product exhibits the strongest correlation with HPI, with a value of 0.9987, while the interest rate has the weakest correlation, with a value of 0.6788. A positive correlation is observed between all of the macroeconomic factors. Nevertheless, the correlation level does not necessarily indicate causation; therefore, additional analysis is necessary to achieve the study's objective.

Table 4: Correlation between variables

Variables	1	2	3	4
Housing Price Index	-			
Real gross domestic product	0.9987	-		
Interest rate	0.6788	0.6684	-	
Inflation rate	0.9171	0.9138	0.7545	-

The Breusch-Godfrey LM test, as illustrated in Table 5, indicates that the model is free from serial correlation up to two orders. In contrast, the Breusch-Pagan test conducted indicates that the model did not exhibit heteroskedasticity. Meanwhile, the CUSUM stability test indicates that all models are stable at a 5 % significance level. On the other hand, the Ramsey RESET test suggests that the linear model is well-specified, as the null hypothesis's correctly specified model is not rejected at a 10% significance level.

Table 5: Residual and Stability Diagnostics

Test	F-Statistic	Probability
Breusch-Godfrey Serial Correlation LM Test	4.5485	0.0252
Breusch-Pagan-Godfrey Heteroskedasticity Test	0.5563	0.841
Ramsey RESET Test	1.2352	0.2802
Cusum Stability Test	Stabile at 5%	
Cusum of Squares Test	Stabile at 5%	

Note: The number of lags included in the Breusch-Godfrey serial correlation LM test is two (2), while the number of fitted terms in the Ramsey RESET test is one (1).

After completing the Granger Causality test, all variables are stable in the same order of differencing. The Granger Causality test is employed to evaluate the factors that contribute to HPI. A one-way or two-way relationship is possible. According to ElemUche et al. (2018), a variable may forecast another after it has been determined to be the Granger cause of another.

Table 6: Pairwise Granger Causality Tests

Null Hypothesis	F-Statistic	Probability
IFR does not Granger cause HPI	5.68309	0.0085
HPI does not Granger cause IFR	1.20453	0.3149
INR does not Granger cause HPI	4.51934	0.0199
HPI does not Granger cause INR	0.00176	0.9982
INR does not Granger cause IFR	2.78445	0.0789

Based on Table 6, there is causality effect found between HPI and INR. For HPI and INR, there is one-way relationship found as the probability for the null hyphotesis of HPI does not Granger cause INR is rejected with

p-value 0.0199vbwhich is less than 0.05. this shows that the variable HPI is valuable in forecasting INR but INR does not Granger cause HPI. On the contrary, there is no one – way and two – way associations found between HPI and GDP and IFR, as both null hyphoteses for the one relationship is accepted. Figure 3 shows the association between HPI and the determinants.

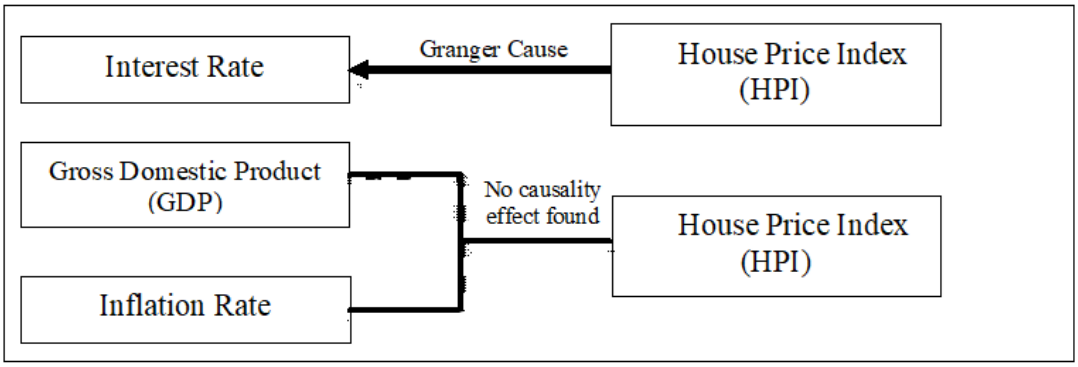

Figure 3. Association between HPI and Determinants

CONCLUSION

The present study examines the correlation between macroeconomic determinants and house prices in Malaysia from 1988 to 2022. The results indicate that the relationship between the variables is mutually consistent with house price theories' demand and supply aspects. The current paper analyzed the long-term relationship using the ARDL model and discovered that the simultaneous movement of macroeconomic factors is a significant factor in explaining housing prices in Malaysia. Similar to the findings of Sutton (2002) and Bank Negara Malaysia (2012), interest rates have an inverse relationship with house prices. In particular, an increase in the aforementioned macroeconomic factor leads to a decrease in house prices. Concurrently, the income effect is validated by a decrease in gross domestic product growth, as demonstrated by Capozza et al. (2002), Sutton (2002), and Bank Negara Malaysia (2012). House prices decrease in response to an increase in the housing supply and inflation rate, which has a similar impact on the interest rate. The findings of previous literature on the supply side of the house price theory, such as Ho and Ganesan (1998) and Capozza et al. (2002), are substantially expanded by the impact of housing supply on the house price reduction. The structural break is evident in the macroeconomic variables, as evidenced by the unit root tests. However, it is determined to be insignificant in explaining the long-term movement of house prices.

This investigation aimed to determine whether there is a substantial correlation between the variables specified. To mitigate the effects of the increase in gross domestic product, strategies must be developed to encourage the expansion of the housing supply. The objectives of this study were to investigate the short- and long-term impacts of macroeconomic factors on the housing price index, as well as the trend in house prices from 1988 to 2022. Additionally, the study sought to determine the influence of macroeconomic factors on the housing price index in Malaysia. In particular, the research's specified objectives have been satisfactorily addressed. This is due to the researcher's ability to examine the fluctuations in property prices over the past 35 years.

It is imperative for policymakers to consistently monitor the movements of these macroeconomic variables in light of their substantial influence on house prices in the country, both in the short and long term, as evidenced by the findings. In order to mitigate the effects of the increase in the real gross domestic product, it is necessary to develop strategies that encourage the expansion of the housing supply. Additionally, the economic capacity of individuals to acquire the asset is weakened by the elevated levels of inflation and interest rates, which results in a decrease in their demand. Consequently, monetary policy should be modified to mitigate the adverse effects of these variables. The relationship should be analyzed on a specific market basis, and microeconomic variables should be included in future research, as the current paper is conducted at the aggregate level. This will enhance comprehension of the subject matter and facilitate the development of more precise policies tailored to the unique characteristics of each individual market in Malaysia.

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