

## The Impact of Institutional and Legal Frameworks on Housing Affordability in Malaysia: An ARDL Approach Case Study

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### Abstract

Housing affordability has emerged as a critical issue of discourse, owing to a substantial rise in the number of unaffordable houses in Malaysia. To contain this issue, the Malaysian government has decided to reform several housing programmes. However, the decision leaves the public with more questions regarding its impacts on affordability among households, especially among lower income earners. This study was designed to address these inquiries by estimating the impact of institutional and legal frameworks, with a specific focus on corruption and trade openness, on housing affordability. The study employed the Auto Regressive Distributed Lag Auto Regressive Distributed Lag (ARDL) model approach to effectively analyse the dual short-term and long-term impacts of institutional and legal frameworks on housing affordability. The findings reveal the existence of both long-term and short-term relationship between trade openness and housing affordability. In addition, corruptions exhibit a pronounced impact in the long run, but not in the short run. The result suggests that trade openness emphasize the crucial influence of legal and institutional frameworks in shaping the attainment of housing affordability in Malaysia. Yet, the findings from this study touches on essential aspects of our society, encompassing economic well-being, social equity, urban development, and environmental sustainability. Its significance lies not only in its potential to shed light on existing challenges but also in its capacity to inspire positive change and the development of policies that foster a better quality of life for all.

Keywords: Corruption, Trade openness, Economic determinants, Housing affordability

### 1. Introduction

Amid the quest for worldwide advancement, the convergence of housing affordability and the Sustainable Development Goals (SDGs) arises as a crucial storyline. Beyond being mere shelter, housing encapsulates notions of security and dignity. Nevertheless, the endurance of obstacles to housing affordability undermines our pursuit of inclusivity. Housing affordability shares a strong correlation with multiple aspects of the SDGs, finding its most direct link within the sphere of "Sustainable Cities and Communities." Particularly, housing affordability is in harmony with SDG 11, which strives to create cities and human habitats that are all-encompassing, secure, robust, and environmentally sustainable. The inception of Malaysia Housing Plan in 1966, aiming to provide housing as a social service, aligns with the goal of SDG 11; creating inclusive and sustainable cities and communities. Figure 1 illustrates a range of government-affiliated affordable housing schemes, each strategically devised to advance the SDGs. These initiatives are aimed at ensuring the availability of secure, reasonably-priced, and sustainable housing options for a broader segment of the population, thereby contributing to the fulfillment of SDG targets.

Figure 1: Top Government Housing Schemes in Malaysia

Scheme	Target Market
PR1MA (Perumahan Rakyat 1 Malaysia)	Middle-income earners with a household income of RM2,500 to RM15,000.
MyHome	Financial assistance to first-time homebuyers. (10% down payment assistance for homes priced between RM100,000 to RM500,000)
People's Housing Programme (Program Perumahan Rakyat)	Low-cost homes that are priced between RM42,000 to RM250,000. (caters to low-income earners.)
Rumah Selangorku	Affordable homes that are priced between RM42,000 to RM250,000.(caters to middle-income earners)
Residensi Wilayah	Affordable homes that are priced between RM150,000 to RM300,000.(targets middle-income earners in the Kuala Lumpur and Putrajaya areas)

Source: <http://www.iproperty.com.my>

Undoubtedly, housing affordability is a multifaceted challenge encompassing diverse factors. Central among these are the institutional and legal frameworks governing housing. These frameworks wield transformative influence in tackling housing affordability by deterring corruption and fostering trade openness. As mentioned by Bharati et al. (2023), this implies that governments tend to allocate more resources to economic and housing-related sectors when their economies are more open to international trade while Maluleke et al. (2019) found that corruption undermined the confidence of the public in the government's capacity to offer affordable housing to low-income families in South Africa. Their proactive engagement is pivotal in enhancing housing affordability and ensuring universal access to equitable housing opportunities.

Trade openness and corruption, while distinct, can affect each other in important ways. Corruption can undermine the benefits of trade openness by distorting markets, making fair competition difficult, and discouraging foreign investment. On the other hand, if not properly managed, trade openness can create opportunities for corrupt practices.

This research is focused on comprehending the effect of trade openness and corruption on housing affordability in Malaysia. The crucial role of institutional and legal frameworks is underscored, coupled with their interaction with various economic factors, in shaping this complex relationship. To achieve the research objectives, the Auto Regressive Distributed Lag (ARDL) approach was utilized. This approach enabled the analysis of long-run relationships and short-term dynamics, while also considering potential feedback effects. This makes it well-suited for assessing policy impacts on key economic factors, offering policymakers valuable insights into potential outcomes of different policy actions.

These are the major components of this study:

- Literature review: highlights the main contribution to scientific knowledge by assessing important literature.
- Methodology: Estimates the relationships between housing affordability, and legal and economic conditions by using the ARDL approach.
- Findings: Highlights the important results derived from the effect estimation.
- Conclusion: A brief explanation of the findings and their significance.

## **2. Literature Review**

This section presents key findings from the literature that reveal gaps in research related to housing affordability. Through a thorough literature review, this study has identified two significant research gaps that contribute to its originality. Firstly, there is a lack of studies in the literature that used the advance methods such as the ARDL approach to examine the influence of variables on housing affordability. Secondly, research on the impact of institutional and legal frameworks on housing affordability is rare in the Malaysian context. The following sections provide a detailed exploration of the findings in the literature.

Numerous empirical investigations were carried out to analyze how economic indicators influence housing affordability. These studies encompassed a wide spectrum, spanning from the national level to specific regions and localities. Commonly observed themes within global empirical research, especially in developing nations, include housing price dynamics, impacts of inflation, government spending, and exchange rate effects on housing affordability (Anthony, 2022; Ramakrishnan et al., 2021; Kleshcheva, 2021; Belousov, 2019; Suhaida et al., 2011; Demary, 2010; Glaeser & Gyourko, 2002)

Recent studies on housing affordability in Malaysia include a number of works by Hassan et al. (2021), Soon and Tan (2019), Rangel et al. (2019), Yap and Ng (2018), and Bujang et al. (2010). These were national and local studies that focused on the valuable insights into the challenges and issues related to housing affordability in Malaysia and proposed various approaches to address the issue. For instance, Bujang et al. (2010) discovered that demographic factors play a significant role in determining affordable housing and that these factors have influenced the housing market dynamics, affordability levels, and housing preferences of the residents, while Soon and Tan (2019) emphasized the need to address affordability issues and understand and cater to homebuyer preferences in the housing market. These studies under consideration primarily concentrated on clarifying the needs, preferences, and obstacles encountered by prospective homebuyers or tenants, thereby confining their investigation to the demand determinants within the housing domain. As a result of these gaps in the literature, we are able to provide useful insights into a broader perspective on addressing housing affordability by considering factors beyond demand side determination and highlighting the institutional and legal framework, particularly trade openness and corruption, which can influence housing affordability, as well as the impact of economic indicators on the housing industry.

There are several amounts of empirical evidence for the institutional and legal aspects, like trade openness, corruption, and also economic indicators that influence the housing affordability in other countries. Works by Lee et al. (2022), Helble et al. (2021), Ebekozién et al. (2020), Mohan et al. (2019), Cohen and Karpavičiūtė (2017), Ezebilo (2017), Masron and Nor (2016), Zou (2014), Widoyoko (2007) and Krieger (1994). Sharam et al. (2015) highlighted the effective strategies to promote the development of medium-density housing and enhance affordability. They proposed that addressing planning and regulatory barriers, offering targeted financial incentives, and fostering greater community acceptance can collectively facilitate the creation of medium-density housing options that are more accessible to a broader spectrum of residents.

The relationship between trade openness, corruption, and housing affordability is complex and multifaceted. A substantial body of extant research consistently establishes a positive association between increased economic openness and heightened levels of economic growth. However, it may also engender housing price bubbles and result in a concomitant reduction in housing affordability (Bharati et al., 2023; Chua et al., 2020; Zeng et al., 2020; Masron & Nor, 2016). Meanwhile, Kepili (2020) and Cesa Bianchi et al. (2015) discovered that elevated levels of trade openness can exert a positive influence on housing affordability, expanding accessibility and affordability of homes to a broader demographic.

The impact of corruption on housing affordability can vary from one region or country to another, depending on the extent of corruption, the effectiveness of anti-corruption measures, and the specific dynamics of the housing market (Ebekozién, 2020; Ajayi et al., 2016; Marutulle, 2021; Cruz, 2008; and Huchzermeyer, 2008). However, there is no direct research on the relationship between trade openness, corruption, and housing affordability.

The findings by Sharam et al. (2015) appear to be consistent with the findings of Chan and Adabre (2019) which emphasize the importance of integrating sustainability principles into affordable housing projects and identify key factors that contribute to the success of such initiatives. According to U.S. Department of Housing and Urban Development regulatory mechanisms; encompassing zoning ordinances, growth management controls, rent regulations, building codes, and environmental stipulations can exert inhibitory effects on the attainability of affordable housing (U.S. Department of Housing and Urban Development, 2021). Mitigating these regulatory constraints holds the potential to augment the inventory of affordable housing units.

Previous research has consistently demonstrated that the presence of well-defined legal and institutional structures significantly shapes the availability and affordability of housing options, particularly in the context of affordable housing. These frameworks exert a pivotal influence on various aspects of housing, impacting factors such as accessibility, cost, and overall housing conditions.

### 3. Methodology

This study aims to investigate the impact of trade openness and corruption on housing affordability in Malaysia. Therefore, this section describes the methodology used in this study, which was based on a modelling technique. The modelling technique employed in this study was the Autoregressive Distributed Lag (ARDL) approach. The ARDL approach is a widely used econometric method for analysing the long-run and short-run relationships between variables. Data on housing affordability, trade openness, corruption, interest rate, inflation rate and government expenditure were extracted from the World Bank, National Property Information Centre (NAPIC), Department of Statistics Malaysia (DOSM) and transparency international website. The model specification is as follows:

$$\ln HA_{it} = \beta_0 + \beta_1 \ln TO_{it} + \beta_2 \ln Cor_{it} + \beta_3 \ln IR_{it} + \beta_4 \ln Inf_{it} + \beta_5 \ln GE_{it} + \varepsilon_{it}$$

**ln HA** is the log of housing affordability ratio measured by overall house price over GDPP, while **ln TO** is the log of trade openness index to represent trade openness, and **ln Cor** is the log of corruption perception index to represent corruption. **ln IR** is the log of lending interest rate to represent interest rate, while **ln Inf** is the log of consumer price index to represent inflation, and **ln GE** is the log of government expenditure in MYR. All variables here underwent a logarithmic transformation to present our findings in percentage form.

In this study, several credible sources were utilized to obtain the necessary data for analysis. These sources include:

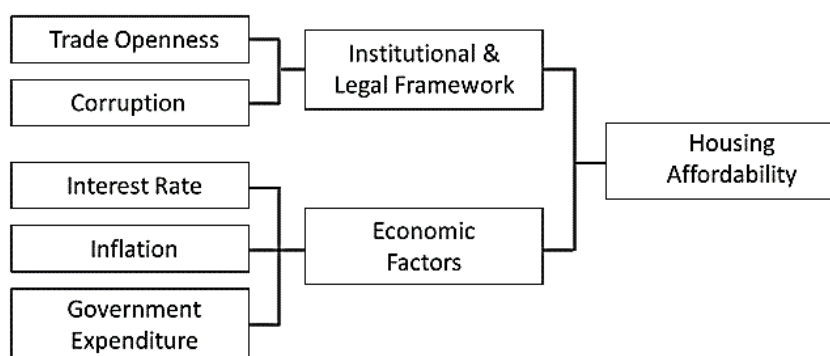
- i. National Property Information Centre (NAPIC) for housing prices in Malaysia: NAPIC provides reliable data on housing prices in Malaysia. This source is commonly used to track and analyse trends in the housing market.
- ii. Department of Statistics Malaysia (DOSM) for Gross Domestic Product per capita (GDPP) and employment rate: DOSM is a reputable government agency responsible for collecting and publishing various economic and demographic statistics in Malaysia.
- iii. Bank Negara Malaysia (BNM) for interest rate, government expenditure and inflation rate: Data on interest rates, government expenditure and inflation rate provided by BNM are crucial in understanding macroeconomics and its impact on the housing affordability.

Table 1: Measurement of variables

Variable	Classification	Data Measurement	Unit	Sources
Housing Affordability (HA)	Dependent Variable	Overall House Price Over GDPP	Ratio	NAPIC & DOSM
Trade Openness (TO)	Independent Variable	Trade Openness Index	Percentage	World Bank
Corruption (Cor)	Independent Variable	Corruption Perception Index	Percentage	Transparency International
Interest Rate (IR)	Control Variable	Lending Interest Rate	Percentage	BNM
Inflation Rate (Inf)	Control Variable	Consumer Price Index	Percentage	BNM
Government Expenditure (GE)	Control Variable	Government Expenditure	RM million	BNM

The time series data used in this study were on a yearly basis, covering a period of 20 observations starting the year of 2001 until 2021. It is important to rely on reputable and official sources like NAPIC, DOSM, Transparency International and BNM to ensure the accuracy and reliability of the data used in the analysis (Shrestha and Bhatta, 2018). By utilizing these credible sources, the study aims to provide reliable and valid insights into the relationship between housing affordability, trade openness, corruption, interest rate, inflation rate and government expenditure in Malaysia during the specified time period.

Figure 2: Conceptual Framework



The housing affordability is influenced by a wide range of interconnected factors, making it a complex and multifaceted issue that requires careful examination. A conceptual framework, as shown in Figure 2, was developed to explore how the institutional and legal framework, particularly trade openness and corruption can influence housing affordability, as well as the impact of economic indicators on the housing industry. Moreover, the dynamics of the housing industry are significantly influenced by various economic indicators, including interest rate, inflation, and government expenditure as mentioned in Cohen and Karpavičiūtė (2017) and Mohan et. al (2019).

### 3.1 Data Analysis

#### 3.1.1 Unit root test

For the data analysis process, several essential procedures were meticulously followed. The initial step involved conducting tests of stationarity using both the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests. To ensure robustness, the optimal lag length for the ADF test was automatically determined through the application of the Schwarz Information Criteria (SIC), while for the PP unit root test, the bandwidth selection was accomplished using the Newey-West method.

Based on the outcomes of the ADF and PP tests, the variables in this study were categorized into three groups: those that were stationary purely at level I (0), those that were stationary purely at first difference I (1), or those that exhibited a combination of both level and first difference. This crucial categorization served as the foundation for selecting the most appropriate statistical models to be used for analysis purposes.

To reject the null hypothesis ( $\beta = 0$ ) that the data is non-stationary, t-statistic values greater than the critical value or probability values lower than the selected significance level were employed. By doing so, the series would be deemed stationary, thereby providing critical insights into the nature of the data and guiding the selection of optimal statistical models for the subsequent analysis.

### 3.1.2 Co-integration test

When dealing with multiple variables, cointegration tests specifically designed for such scenarios must be used. The most commonly used cointegration test for multiple variables is the Johansen cointegration test. This test is an extension of the Engle-Granger test and allows researchers to test for cointegration among several non-stationary time series simultaneously.

The Johansen cointegration test involves estimating a Vector Autoregression (VAR) model for the set of variables. The VAR model allows you to capture the interdependencies and lagged relationships among the variables. If the Johansen test confirms the presence of cointegration, it indicates the existence of stable, long-term relationships among the variables. The number of cointegrating relationships identified corresponds to the number of statistically significant eigenvectors or trace statistics.

### 3.1.3 ARDL test

The ARDL cointegration test can handle both short-run and long-run dynamics and is particularly suitable for small sample sizes. It is based on the bounds testing approach, where the null hypothesis is that there is no cointegration in the system. This test requires all variables to be integrated of the same order; the ARDL test accommodates the presence of I(0) (integrated of order 0) and I(1) variables in the same system.

If the bounds F-test confirms the presence of cointegration for any of the estimated ARDL models, it indicates the existence of stable, long-term relationships among the variables included in that specific model.

### 3.1.4 Diagnostics test

In the context of time series analysis and cointegration, the diagnostics tests in the ARDL approach were conducted to assess the adequacy of the ARDL model, identify potential problems, and ensure the reliability of the estimated results. These diagnostics tests were crucial to validate the ARDL model, ensure the reliability of its results, and identify any potential issues or limitations in the estimated relationship between the variables.

## 4. Findings

This section presents the major findings from the study. The main focus of the study was on investigating the influence of trade openness and corruption on housing affordability, highlighting the significance of institutional and legal frameworks in this context, as well as their interaction with various economic factors.

### 4.1 Unit Root Tests

Assessing the stationarity of data across five variables; trade openness index, corruption perception index, lending interest rate, consumer price index, and government expenditure was crucial. In this study, unit root tests were applied using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) approaches, and the obtained results are presented in Table 2.

Table 2: Unit Root Tests

LEVEL I (0)	ADF UNIT ROOT		PP UNIT ROOT	
	Intercept	Trend & Intercept	Intercept	Trend & Intercept
HA	-2.443	-2.439	-2.443	-2.439
TO	-0.679	-2.033	-0.693	-2.190
Cor	-4.006***	-3.943**	-4.029**	-3.949**
IR	-6.190***	-2.312	-5.307***	-9.211***
Inf	-0.095	-2.123	-0.095	-2.123
GE	-3.696**	-3.626**	-3.583**	-3.490*
LEVEL I(1)	ADF UNIT ROOT		PP UNIT ROOT	
	Intercept	Trend & Intercept	Intercept	Trend & Intercept
HA	-4.551***	-4.961***	-4.550***	-4.961***
TO	-3.955*	-3.770**	-3.955***	-3.770**
Cor	-5.562***	-5.400***	-10.3967***	-10.059***
IR	-8.345***	-7.257***	-5.307***	-9.211***
Inf	-4.568***	-4.448***	-4.568***	-4.448***
GE	-5.850***	-5.696***	-11.838***	-12.087***

Note: \*\*\*, \*\* and \* are 1%, 5% and 10% of significant levels, respectively.

The results of the unit root tests reveal that all variables display stationarity at level and first difference, as indicated by both the ADF and Phillips-Perron methods. This suggests that the variables possess a mixed order of integration. Thus, the application of the ARDL approach became viable in this study, enabling an examination into the effects of trade openness and corruption on housing affordability. Furthermore, this approach allows for the exploration of their intricate interactions with interest rates, inflation, and government expenditure.

#### 4.2 Co-integration Test

Co-integration tests serve as valuable statistical tools that help ascertain the presence of enduring relationships among variables. As demonstrated in Table 3, the outcomes of the bound test for co-integration exhibit a noteworthy F-statistic value of 4.982, which exceeds the critical bound threshold of 3.38 at a 5 percent level of significance. Consequently, the null hypothesis of no co-integration is rejected, establishing compelling evidence for a robust, long-term connection between the dependent variable of housing affordability and the independent variables – including interest rate, inflation, and government expenditure – within the context of Malaysia. With co-integration observed across all examined variables, the utilization of ARDL model for comprehensive estimation in both the long-run and short-run emerges as a suitable and well-justified approach.

Table 3: Bound Test for the Existence of Co-integration

Model	Max Lag	Lag Order	F statistics
LNHA = F(LNTO, LNCOR, LNIR, LNINF, LNGE)	1,1	1,1,0,1,0,0	4.982
Critical Values for F stat		Lower I(0)	Upper I(1)
10%		2.08	3
5%		2.39	3.38
1%		3.06	4.15

#### 4.3 ARDL test

In Table 4, the outcomes of the study are showcased, and depict the comprehensive effects of trade openness, corruption, interest rate, inflation, and government expenditure on the dynamics of housing affordability across both the long-run and short-run perspectives.

The central objective of this investigation delves into the interconnections among trade openness, corruption, and housing affordability, with a particular emphasis on understanding their correlations.

Table 4: Long-run& Short-run Analysis

Variables	Coefficient	t-stat	Prob
<b>Long run Analysis</b>			
C	21.3618	3.6772	0.0025***
LNT0	-2.3286	-4.4436	0.0006***
LNCOR	0.9586	2.2123	0.0441**
LNIR	0.3777	1.5633	0.1403
LNINF	-2.4068	-3.2861	0.0054***
LNGE	-0.0809	-1.4775	0.1617
<b>Short run Analysis</b>			
LNT0	-0.5047	-3.3916	0.0044***
LNINF	-2.4348	-6.9711	0.0001***
ECT	-0.5012	-7.0583	0.0001***

Note: \*\*\*, \*\* and \* are 1%, 5% and 10% of significant levels, respectively.

The findings indicate a noteworthy influence of trade openness on housing affordability in the long run. The coefficient for trade openness stands at -2.3286 which demonstrates statistical significance at the 5 percent level. This suggests that a mere 1 percent increase in trade openness is associated with a substantial 2.33 percent reduction in housing affordability level over the long run. The negative sign of the coefficient suggests an inverse relationship between trade openness and housing affordability level. In other words, as trade openness increases, housing affordability level tends to decrease, holding other variables constant. This suggests that higher levels of trade openness can have a positive impact on housing affordability and can make homes more accessible and affordable to a larger population as mentioned in Kepili (2020) and Cesa Bianchi et al. (2015).

Regarding the connection between the corruption perception represented by the corruption perception index (CPI) as a proxy for corruption in the analysis, the findings suggest that higher levels of perceived corruption negatively impact housing affordability in the long run. The coefficient for the corruption perception index is calculated as 0.9586, which is statistically significant at the 5 percent level. This implies that a 1 percent increase in the corruption perception index may lead to an estimated 0.96 percent increase in housing affordability level. A rise in Corruption Perception Index (CPI) signifies reduced perceived corruption and improved governance, yet housing affordability continues to deteriorate which suggests the presence of additional influencing factors as highlighted in the observations made by Sharam et al. (2015) and corroborated by the findings of Chan and Adabre (2019). In accordance with the findings by Domashova and Politova (2021), a higher CPI score signifies a positive development, denoting an enhanced reputation for integrity and transparency within a country. CPI defines corruption as “the misuse of entrusted power for private gain” and assesses countries on a scale ranging from 0 (indicating a high level of corruption) to 100 (representing a low level of corruption).

Pertaining to the supplementary housing affordability determinants incorporated into the model, the findings indicate that the coefficients for both the interest rate and government expenditure are not statistically significant at the 5 percent level. This implies that neither of these variables directly influences housing affordability based on the results of the analysis. Nonetheless, the outcomes highlight a positive effect of inflation on housing affordability level. The coefficient associated with inflation stands at -2.4068, indicating that a mere 1 percent increase in inflation can potentially lead to a considerable 2.41 percent reduction in housing affordability level over the long run. This implies that rising inflation can make housing more affordable for individuals or households. The impact of inflation on housing affordability is not uniform and depends on a complex interplay of regional and national economic conditions, government policies, and various other economic and market factors (Bujang et al., 2010). While inflation can be a contributing factor in reducing housing affordability, it is just one of several elements that influence the overall state of housing affordability as discussed in Sharam et al. (2015) and Chan and Adabre (2019).

In the short run, the findings presented in Table 4 indicate that among the variables examined, only trade openness and inflation exhibit statistically significant effects on housing affordability. Specifically, the results reveal that trade openness and inflation are the two factors that significantly influence housing affordability.

Notably, trade openness is associated with a negative impact on housing affordability, suggesting that an increase in trade openness is linked to reduced affordability level of housing in a short run. In the short term, more trade openness can make housing more affordable. This reiterates the significant relationship between trade openness and housing affordability. This happens because trade activity can generate increased tax revenue for governments. Some of this revenue can be earmarked for affordable housing initiatives, subsidies, or incentives to encourage affordable housing development. As a result, housing becomes more affordable for many individuals and families.

Also, the findings show inflation has significant impact on housing affordability in a short run as higher levels of inflation can lead to an augmentation in the expenses linked to procuring a mortgage for house acquisition. This escalation in borrowing costs consequently plays a role in elevating the overall financial burden of owning a home as mentioned in Munro (2018). The estimated ECT for the model used in this study is significantly negative at 5 percent significant level. The coefficient of ECT is -0.5012, which indicates that about 50.1 percent of the disequilibrium is corrected to reach its long-term equilibrium within one-year time. Therefore, it suggests the existence of long-run relationship among the variables.

### 4.3 Diagnostic tests

Table 5 presents the outcomes of three diagnostic tests aimed at validating and confirming the acceptability of the model estimated in this study. The first test assesses autocorrelation and indicates the non-rejection of the null hypothesis of no autocorrelation in the original equation, as evidenced by a p-value of 0.5051 from the Lagrange Multiplier Serial Correlation (LMSC) test. The second test, the Ramsey RESET test, affirms that the functional form of the model is appropriately specified, with a p-value of 0.1188 exceeding the 5 percent significance level threshold. The final diagnostic, the White Heteroscedasticity test, reveals a p-value of 0.6382 exceeding the 5 percent significance level, which indicates the absence of heteroscedasticity in the model's error term.

Table 5: Diagnostic Tests

Model	Autocorrelation (p-value)	Functional Form (p-value)	Heteroscedascity (p-value)
LNHA = F(LNTO, LNCOR, LNIR, LNINF, LNGE)	0.7235 [0.5051]	2.7891 [0.1188]	0.7652 [0.6382]

Furthermore, the stability test is crucial for the ARDL model's validity. For this study, CUSUM test was used to check the parameter stability in the model. It is revealed that CUSUM and CUSUMSQ test statistics are within 5 percent significant level, indicating that all the parameters in the model are stable across various subsamples of the data.

Figure 3: CUSUM Test

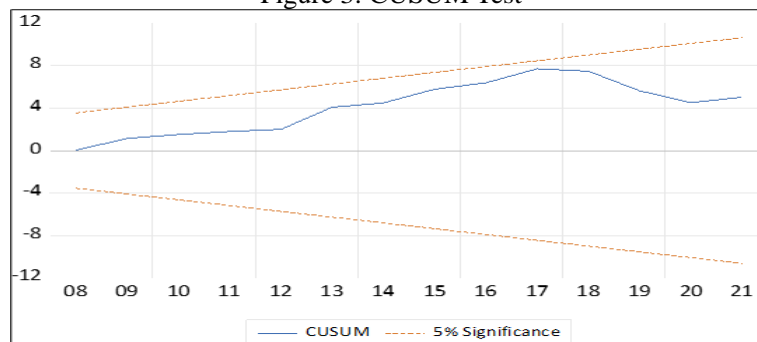


Figure 4: CUSUMSQ Test

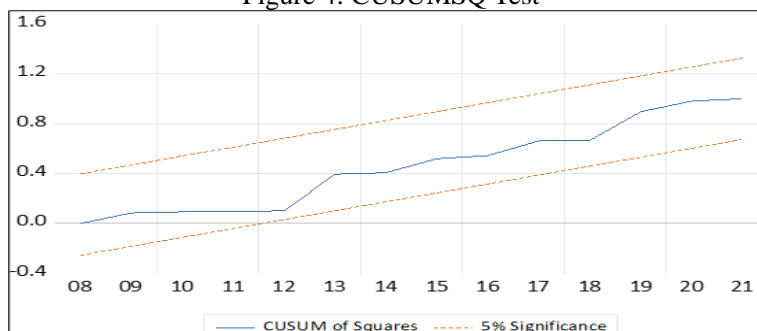




Figure 2 and Figure 4 represent CUSUM and CUSUMSQ tests respectively. The results reveal that there is no evidence of significant parameter instability in the time series data which implies that the data does not exhibit any systematic upward or downward shifts from the reference value for CUSUM tests and the variance or dispersion of the data is relatively constant and does not exhibit significant changes for CUSUMSQ test for this study.

### 5.0 Conclusion

This study reveals significant findings regarding both the long-term relationship and the notable short-term correlation between trade openness and housing affordability. These outcomes emphasize the crucial influence of legal and institutional frameworks in shaping the attainment of affordable housing. It is essential to recognize that the effectiveness of trade openness as a strategy relies on a country's internal policies, market conditions, and global trends. Nonetheless, trade openness indeed exerts a substantial impact on housing affordability. Conversely, the results reveal that corruption has a pronounced impact in the long run, whereas its influence on the short-term trajectory of the housing market in Malaysia is comparatively limited.

Regardless of how useful the findings of this study are, they must be interpreted with caution because the relationship between variables can be complex and may vary across different contexts and regions, and this study is focused only on trade openness and corruption as proxy for legal and institutional frameworks. Researchers typically consider a range of relevant factors to provide a comprehensive understanding of the issue at hand. For future research, this study suggests that an in-depth exploration into the intersection of housing affordability and legal and institutional frameworks holds the potential to provide comprehensive solutions to the intricate challenges pertaining to affordable housing in Malaysia, particularly with regard to the supply side of the housing sector. By providing evidence-based guidance for policymakers and fostering discussions on housing affordability solutions, this research contributes to more inclusive and sustainable housing systems.

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