The Impact Of Government Policies On House Prices In Malaysia: An Autoregressive Distributed Lag (ARDL) Cointegration Approach.

Paul Anthony Mariadas[1], Hussin Abdullah [2], Norehan Abdullah [3]

[1]*SEGi University*
[2,3]*University Utara Malaysia*

Email: paulanthonydas@segi.edu.my

Abstract: This paper examines the impact of government policies on house prices in Malaysia. In addition, this study also includes the role of gross domestic product, interest rate and total population as emphasised by the Life Cycle and Overlapping Generation Models. This study used an annual time series data from 1988 to 2017. By using autoregressive distributed lag (ARDL) framework, we develop a model of house price determination with a focus on government policy. This study revealed that PR1MA has a positive association with house prices. On the other hand, MM2H is not a primary contributor to the house prices in Malaysia.

Keywords: House Price; Government Policy; Autoregressive Distributed Lag (ARDL)

1. INTRODUCTION

The demand for housing in Malaysia has continuously increased, and it has been expected to exceed 30 million by the year 2020 (Chan, 2009). Hence, it is the Malaysian government's responsibility to offer adequate and quality housing for all Malaysians, especially those from low- and middle-income households. Moreover, in the effort to fulfil the present housing requirements, especially for the low- and middle-income households, both the private and government sectors must play their part to accomplish their social responsibility to the people (Osmadi, Kamal, Hassan, and Fattah, 2015). In the Tenth Malaysia Plan (2011-2015), the approach towards progression appeared to be a key strategy in attaining an equitable society regardless of ethnic, socio-economic status, geography, or gender. The main focus was on the bottom-40-per cent- (B40) and middle-40-per cent- (M40) household income groups to reap benefits from the national economic growth. Aziz, Hanif, and Singaravello, (2014) stated that most of the middle-income population are at Kuala Lumpur and other major cities in Malaysia, mainly due to job opportunities. As a result, the demand for housing in such major cities has been escalating.

The affordable housing market in Malaysia has gradually increased in recent years up to this very present time. Unfortunately, the increasing Malaysian population fails to match the amount of affordable housing, particularly in the cities (Wood, 2007; Jenkins, Smith, and Wang, 2006). The number of households increased by about 117,250, but the number of new

houses completed averaged 166,876 units annually between 2005 and 2008, implying a surplus supply of housing units of about 49,626 units per year. Over the past five years, however, the annual completion of houses has declined considerably to 80,089 units, far below the 166,000 average net increase in the number of households annually. This information suggests that between 2011 and 2015 there was a shortage of an average 85,911 housing units per year.

Due to the appreciation of house prices in the nation and the concern about housing affordability, the past Malaysian government launched PR1MA homes in 2012 to provide middle-income group access to own a home (Shatar, 2017). Also, the present government, which went into force in May 2018, gives the corresponding individuals more interest in offering this sort of affordable houses. Further to this, the moratorium period on the PR1MA homes has been reduced from 10 to 5 years in 2017, and it starts from the sale and purchase agreement signing (The Edge, 2017). However, it will encourage speculation as owners will be able to sell their homes within 14 months after vacant possession, assuming the construction period is 36 months. If the PR1MA projects' locations are desirable, that means there is a good possibility of the prices appreciating in the five years holding period; thus, it will be easy selling them at the end of the stipulated time. Hence, the role of the PR1MA should be examined in the house price model since it may reveal interesting information for policy implication which have been overlooked in the previous housing studies.

Similarly, Malaysia My Second Home (MM2H) is a good programme unless foreigners are speculating on the property market, which is then very bad for Malaysia. MM2H applications has been on an increasing trend in in recent years. Since its inception in 2002, more than 40,000 applications from 130 countries for MM2H programme had been approved. There were around 3,084 approved applications during the first eight months of 2017 under the programme. Most foreign buyers came from China (46.7 per cent), Korea (9 per cent), Bangladesh (8.2 per cent), Japan (5.8 per cent) and Hong Kong (4.9 per cent) (Malaysia's My Second Home (MM2H) Centre, 2018). Since the demand for the houses keeps on increasing, this will give an impact on the house prices. Additionally, speculative foreign purchases will ultimately result in the purchasers off-loading the properties to Malaysian buyers at a higher price for a profit. Other than that, there were instances where foreign purchasers were invited by project developers and marketing agents to invest in Malaysian properties (FMT, 2019). This practice is not healthy. These foreign purchasers invested in off-plan projects, and after a couple of years, sold off the properties to locals for a good profit. Hence, the role of the MM2H should be examined in the house price model as it was overlooked in the previous housing studies.

2. LITERATURE REVIEW

A method to offer low priced shelter which satisfies basic needs must be concurred with the aspiration to provide not just a house but a better and more affordable urban environment to help satisfy other aspirations, such as privacy, comfort, asset accumulation, and security (Delgado and Troyer, 2017). This methodology also embraces peoples' requirements and choices in the design of new urban housing development projects (Boyer and Mitgang, 1996; Delgado, 2013). Thus, considering the housing choices of future house owners will provide planners and developers the opportunity to give projects that better addresses people needs, requirements, and lifestyles, creating among them a sense of belonging and pride in their houses at an affordable cost (Burnham, 1998; Opoku and Muhnin, 2010; Caldieron, 2011;

Clement and Kayode, 2012). The demand for reasonably priced housing in the world is continuously increasing. According to the World Cities Report (WCR, 2016), 881 million urban households do not have commendable houses and live in shantytowns. By 2025, one billion new houses will be required. However, despite rising demands in the past 20 years, housing has not been a political priority for national or international development (WCR, 2016). In Caribbean regions and Latin American, the demand for affordable houses are at 42 million units (UN-Habitat, 2011). The real consumption in this study represents the demand for housing. If the demand for housing rises, but there is no rise in the supply, the cost of the houses will appreciate. (Boshoff, 2010). Affordable housing is always encouraged as residents are concerned if their property value declines (Nguyen, 2005). Responding to this concern, believers in affordable housing have claimed that affordable housing affects the values of property (Nguyen, 2005). The utmost concerns in the new outlook for affordable housing are structures which are not maintained, increased crime and negative changes to neighbourhood characteristics (Horner, 2009). These could directly impact neighbouring property values. Housing price is imbalanced because of the inequality between demand (DD) and supply (SS) in the affordable housing market. Therefore, beginning in 2014, all developers must build at least 20 per cent low-cost houses and 20 per cent medium-cost houses in their housing project. Consumers must earn a monthly household income of RM3,000 to purchase low-cost houses and a maximum of RM6,000 to purchase medium-cost houses (Arman et al., 2009). There are many studies using multiple regression methods on hedonic price models using massive housing price data sets to analyse the link between affordable housing and property values (Lyons and Loveridg,e 1993; Cummings and Landis, 1993; Goetz, Lam, and Heitlinger, 1996; Briggs, Darden, and Aidala, 1999; Galster, Tatian, and Smith, 1999; Lee, Culhane, and Wachter, 1999; Santiago, Galster, and Tatian, 2001). All these past studies have tried to analyse the influence of affordable housing on property values by controlling few characteristics associated with housing unit, local area or neighbourhood. The studies' findings suggest that there is yet to be a decisive conclusion on the link between property value and affordable houses. A few numbers of previous studies have analysed the effects of affordable houses on local areas. Eriksen and Rosenthal (2010) studied the crowd-out effects of affordable housing construction on private rental development and found significant crowd-out effects. In another related study Baum-Snow and Marion (2009) employed a regression discontinuity and census data method to study the impacts of affordable housing in low-income areas on median incomes, new construction, and property values at the census block group level. They found that housing prices increase in low-income neighbourhoods. Schwartz et al. (2006) examined the price effect of affordable housing in New York City and stated positive results. Freedman and Owens (2011) studied the effect of affordable housing developments on crime at the county level and found mixed results. Goetz et al. (1996) found that surrounding property values prices rises consistently around moderate and small size affordable housing in Minneapolis. Ellen and Voicu (2006) found positive effects for non-profit affordable housing in New York City. This positive effect tends to differ with project scale, with the small non-profit projects often having smaller effects than larger housing projects. Mixed or negative property values effects are discovered for public housing projects. Moderate and small public housing tends to have more mixed effects, while huge public housing projects have negative effects. A study of seven scattered-site, moderate scale public housing projects in Yonkers, New York, found no generalised impact on neighbourhood property values (Briggs et al., 1999). The findings suggested that smaller, dispersed public housing projects are the most likely to create positive property value effects to the surrounding area. The effect of housing projects on surrounding property values may depend on the neighbourhood context. Ahrentzen (2008) established that if situated in low-poverty neighbourhoods in low concentrations, there will be positive

findings for affordable housing. In contrast, in high poverty neighbourhoods, larger-scale housing projects generate the most positive impacts. Regardless of neighbourhood context, affordable housing projects generate the most neighbourhood property value benefits when replacing blighted conditions such as vacant lots or abandoned buildings. In another study, Zhang and Wang (2016) investigated the effectiveness of housing macro regulation policies in China for the period of 2011 to 2013 by using spatial quantile regression. The study reveals that the housing policies are effective in curbing the demand speculation but is facing difficulties to control and decrease the house prices. However, the effectiveness of policies is different across the cities with different level of house prices. Weng and Gong (2017) examined the volatility spillover effect and the factors of house prices in China for the period of 2005 to 2014 by using a novel dynamic spatial panel data model. The result shows that the policy factor is considered as one of the main contributors to house prices.

3. METHODOLOGY/MATERIALS

3.1 Data

This study will use house price index to represent house prices. The independent variables used in this study include gross domestic product, interest rates, population, PR1MA and MM2H. This study will used real gross domestic product (GDP) to measure income (Malpezzi & Maclennan, 2001; Ibrahim & Law, 2014). Besides, Base Lending Rate (BLR) will be using to measure interest rate (Lean & Smyth, 2014). In addition, it is essential to include the total population in this study as well. Furthermore, PR1MA and MM2H will be used as dummy variables in this study. All the data are obtained from National Property Information Centre (NAPIC), Department of Statistics Malaysia (DOSM), World Development Indicator (WDI) and Bank Negara Malaysia (BNM).The sample period is from 1988 to 2017 based on data availability. The Malaysian House Price Index published by the National Property Information Centre (NAPIC) is used to represent house prices. In the analysis, we consider house price indexes at aggregate level.

3.2 Empirical Model

By following Pesaran et al. (2001), this study conducts the ARDL bound testing to assess whether all the variables are cointegrated eventually. The test equations following Yean and Leap (2017) are specified as follows:

$$\Delta LHP_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta LHP_{t-i} + \sum_{i=1}^{p} \alpha_2 \Delta LGDP_{Tt-i} + \sum_{i=0}^{p} \alpha_3 \Delta IR_{t-i} + \sum_{i=0}^{p} \alpha_4 \Delta LPOP_{t-i}$$
$$+ \alpha_5 D_{PRIMA} + \alpha_6 D_{M2MH} + \varphi_1 LHP_{t-1} + \varphi_2 LGDP_{t-1}$$
$$+ \varphi_3 LIR_{t-1} + \varphi_4 LPOP_{t-1} + \varphi_5 D_{PRIMA} + \varphi_6 D_{MM2H} + v_t$$

Where Δ refers to the first difference operator, and p indicates the optimal lag length, which is chosen based on the Akaike Information Criterion (AIC). The variables α_1 to α_7 represent the short-run dynamics of the model, while φ_1 to φ_6 represent the long-run relationship. The (D) represents the dummy variables, 1Malaysia People's Housing Scheme (PR1MA) and Malaysia's My Second Home (M2MH). The null hypothesis indicates that there is no long-run relationship among the variables (H0: $\varphi_{1=} \varphi_{2=} \varphi_{3=} \varphi_{4=} \varphi_{5=} \varphi_{6=} 0$). If the F-test statistic is greater than the critical value proposed by Narayan (2005), then, it can be concluded that all the variables are co-integrated. Once the cointegration has been confirmed, the estimation of the long-run can be conducted and followed by the estimation of the short-run model, which

can help to answer the third objective of this study. Therefore, to investigate the role of government policy in influencing the house prices model, two policies have been included as dummy variables. The estimated equations for the model with government policies are as follows:

$$\Delta LHP_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \Delta LHP_{t-i} + \sum_{i=1}^{p} \alpha_2 \Delta LGDP_{Tt-i} + \sum_{i=0}^{p} \alpha_3 \Delta IR_{t-i} + \sum_{i=0}^{p} \alpha_4 \Delta LPOP_{t-i}$$
$$+ \alpha_6 D_{PRIMA} + \alpha_7 D_{MM2H} + \lambda ECT_{t-1} + v_t$$

Where λ is the speed of adjustment while ECT refers to one period lagged for the error correction model.

4. RESULTS AND FINDINGS

Table 4.1 *Augmented Dickey-Fuller (ADF) and Philip Perron (PP) test*

	Variable	ADF test statistic		PP test statistic	
		Intercept	Trend and intercept	Intercept	Trend and intercept
Level	LNHP	-2.372 (1)	1.648 (0)	-1.673 (0)	-1.648 (0)
	LNGDP	-2.022 (0)	-2.470 (0)	-3.997***(13)	-2.479 (8)
	IR	-1.928 (0)	-2.460 (0)	-1.894 (9)	-2.175 (11)
	LNPOP	-8.694*** (7)	-7.953*** (7)	-13.837***(3)	-1.329 (3)
First difference	LNHP	-3.983***(0)	-3.907**(0)	-3.946*** (3)	-3.866** (3)
	LNGDP	-5.555*** (0)	-6.083*** (0)	-5.559*** (1)	-6.816*** (7)
	IR	-4.693*** (0)	-4.608*** (0)	-6.778*** (27)	-6.544*** (27)
	LNPOP	-3.077** (7)	-0.019 (7)	-0.847 (3)	-2.347 (3)

Note: 1. ***, ** and * are 1%, 5% and 10% of significant levels, respectively.
    2. Number in parentheses is standard errors.

This study has performed the Augmented Dickey-Fuller (ADF) test in order to determine the stationary of the variables. The optimal lag is chosen based on the Akaike Information Criterion (AIC). As shown in Table 4.1, the result of the ADF test supports that the null hypothesis of unit root is failed to be rejected for all the variables at level form except for house prices (LNHP) and population (LNPOP) which are found to be stationary either at 1 and 10 percent significance level. On the other hand, the findings at first difference support that all variables are stationary. Findings of this test indicate that house prices (LNHP), base lending rate (IR), gross domestic product (LNGDP), are integrated at order one, *I (1)*, while,

population (LNPOP) has been found to be stationary at levels , *I (0)*. Hence, the estimation of the long run model based on the Ordinary Least Squares (OLS) is not suitable since it will result in spurious estimation. Thus, it is confirmed that the ARDL approach to cointegration is the most appropriate analysis.

Table 4.2 *Results of Bound Test*

Model	F Statistic	Result
(LNHP)	68.103***	Cointegration
Critical Values for F-statistics	Lower I(0)	Upper I(1)
1%	2.79	4.1
5%	2.22	3.39
10%	1.95	3.06

Note: *, **, and *** represent 10%, 5% and 1% level of significance, respectively.

Based on the result of the F-statistics presented in Table 4.2, the value of the test statistics is found to be greater than the upper bound level which confirms there is a cointegration between gross domestic product (LNGDP), interest rate (BLR) and population (LNPOP) with the house prices which is significant at 1 percent significance level thereby the long run model could be estimated.

Table 4.3 *Result of the Long Run Coefficient Estimates*

VARIABLE	MODEL 1
LNGDP	2.132
	0.177
IR	0.013
	0.835
LNPOP	13.376*
	0.089
PR1MA	0.882**
	0.018
MM2H	-0.183
	0.320

Note: (*),(**),(***) indicate significant at 10per cent,5per cent and 1per cent significance level respectively. Numbers in brackets represent standard error. Model 1: LNHP

Table 4.3 reports the estimated coefficients of the long run model for Model 1 which refer to the determinants of house prices. Based on the findings, all variables carry the mix sign towards aggregate house prices (model 1), whereby only LNPOP and PR1MA seem to be statistically significant at 10 percent and 5 percent significance level respectively. In particular, the estimated coefficient for LNGDP is positive for the model 1 (2.132). This findings imply that 10 percent increase in LNGDP will result in 21.32 percent increase in house prices.

Meanwhile, the estimated coefficient of the IR revealed positive sign (0.013). This findings imply that 10 percent increase in IR will result in 0.13 percent increase in house prices. This shows that low interest rate will encouraged people to buy a house. This results in increase the demand for housing and further influence the house prices (Kamal, Hassan and Osmadi, 2015). In addition, this findings also consistent with MacDonald (2011) who argued that the low interest rate has increased homeownership and made new paradigm to the investors which led to the speculation that had increased the house prices in Penang.

A positive coefficients (13.376) between LNPOP and house price model is not surprising. In addition, LNPOP is statistically significant at 10 percent significant for house prices. These results imply that, 10 percent increase in LNPOP will upsurge the house prices by 133.76 percent for house prices. These results are consistent with Ong (2013) who suggested the population growth will increase the demand for the property and eventually increase the prices.

The findings of this study reveal that the estimated coefficient of PR1MA is positive (0.882) for the house price models and found to be significant at 5 percent significance level for house prices. In particular, the results reveal that a 10 percent increase in PR1MA will result in 8.82 percent increase in house price model. This result is contradict with the findings of the past study done by Phang (2010) in Singapore who claim that affordable housing can indeed lower property prices. In addition, Lee et al. (1999) support this argument by claiming that public housing developments exert a small negative impact on property values in Philadelphia.

Correspondingly, the positive effects found in the present study may due the mismatch between the demand for affordable housing and its supply. As of April 2017, about 265,033 housing units of PR1MA were approved across the country since the launching in 2012 (Shatar et al., 2017). As PR1MA was launched to address housing affordability issues, it has attracted more middle-income earners to own it. Though government initiatives has facilitated housing development considerably, housing interventions have focused primarily on demand side (Samad et al., (2017). In addition, according to the Bank Negara's Financial Stability Review (2018) there is mismatch between demand for affordable housing and supply and this is supported by Khairie (2013) and Lim et al.(2013) who are claiming there were 40 percent gap between the demand for affordable housing and its supply in Malaysia. This shortage of affordable houses could be the reason exerting upward pressure on house prices.

Finally, there is a negative sign (-0.183) observed between MM2H and house price model. However, MM2H found to be statistically not significant. In particular, when there is a 10 per cent increase in MM2H, there is an increase in house prices by 1.83. The MM2H policy has brought in 17, 389 people from various country mainly from from China, Singapore, Britain and Iran from the year 2002 to 2011 (Yoong, 2012). According to Global Property Guide (2019) the number of approved applications for MM2H has increased to an average of 3,200 annually in the past seven years. From 2002 to 2018, more than 40,000 applications have been approved from more than 130 countries, with China accounting for about 30per cent of all approvals. Furthermore, about 83 percent of MM2H applicants have successfully bought a house in Malaysia (Lee et al., 2010).

Table 4.4 Estimation of Short Run Restrictred Error Correction Model (ECM)

MODEL	ECT
HP	48.6***

Note: (*),(**),(***) indicate significant at 10%,5% and 1% significant level respectively.

As discussed in the previous section, since all the variables are found to be cointegrated, therefore, any disequilibrium that occurs in the model represents the short run phenomenon. The magnitude of error correction representation of the ARDL model indicates the speed of adjustment of any short-term deviation of the model towards the long run equilibrium. Based on the estimation result (table 4.4), the error correction terms for the entire model have a negative sign and significant at 1 percent significance. This findings confirm the result of the cointegration test that indicates the existence of a long run association among the variables. The coefficient of the error correction term indicates that any short-term deviation that occurs in the house prices (HP) will be adjusted by 49 percent in a year. The result imply that any short-term deviation in the house prices will take approximately 2 years to completely return to the equilibrium.

5. CONCLUSION

The purpose of the current study is to look into the effect of government policies on the house prices in Malaysia. This study also includes the role of gross domestic product, interest rate and total population as emphasised by the Life Cycle and Overlapping Generation Models. This study used an annual time series data from 1988 to 2017. To answer the objectives of the study, firstly, to determine the stationarity of the variables used in this study, the unit root test is conducted based on Augmented Dickey-Fuller (ADF) test and Narayan and Popp (2010) unit root test. Since the findings of the stationarity test suggest that there exists a mixed order of integration among the variables employed in this study, hence, the Autoregressive-Distributed Lag (ARDL) modelling approach is the most suitable method that can be used to answer the research questions. As demonstrated, the results based on the ARDL modelling approach on the long-run impact reveal that the variables have a long-run relationship. This study revealed that PR1MA has a positive association with all categories of house prices. Although PR1MA was a good initiative, but it is failed to provide affordable houses due to the poor management, exorbitant land acquisition cost and unsuitable sites have turned the PR1MA into a major financial failure. Since, the current study shows a positive relationship, the government should dissolved PR1MA and subsequently improve the housing market which is overwhelmed with thousands of unsold houses. The government has to negotiate with the respective developers to get more discount on the unsold houses to be sold accordingly. In addition, the government should cooperate with the developers by reducing compliance cost and other development charges to get discounts on the unsold houses. Besides that, government can promote more on rent-to-own scheme to help those who cannot secure end-financing to own a property by providing them houses at reasonable rental rates while helping them save for the initial cost to own a home. Apart from that, the state governments need to help build affordable housing scheme using the special scheme of land alienation. In Malaysia, through state government, the federal government can acquire land and designate some specific area for development for a public purpose. Through this action, the house building cost is even smaller because instead of paying the landowner a higher amount to purchase land, the developer only has to pay some small amount of premium for the alienation. This will help to improve housing affordability issues and the same time can sustain the housing market in Malaysia. This study revealed that, MM2H is not a primary contributor to the house prices in Malaysia whereby it is only and positively significant with detached house prices. Hence, MM2H applicants should be welcomed into the country as they may contribute substantially to the Malaysian economy and the property sector. In

addition, the government should re-consider on the minimum requirement for MM2H which is RM1 million to attract more buyers from other countries. This may give a substantial effect on housing market as well as on economic growth of Malaysia.

5.1 *Recommendation for the future studies*

Due to the limitation of this study, further investigation is essential to provide more insight in the study of house prices. Firstly, in order to fully understand the issue of house prices at a global scale, further investigation should be carried out in other countries so that the outcome of the study can be compared. In addition, further analysis using a panel data is also useful to explore on how far the country's difference have impacted the house prices across countries. Secondly, this study focuses more on the demand side factors since it has been found to have dominant effects on the house prices model. Hence, the inclusion of more supply side determinants such as housing supply, cost of construction, housing stock and land prices would enable the researcher to investigate the behavior of both demand and supply side in affecting the house prices model. In addition, the investigation from the developers side also beneficial to get a better understanding on how the housing price is determined and form a basis for government to help tackle the housing affordability issue. Finally, the present study is the relatively small number of observations because it uses annual data, which were considered more appropriate in capturing the long-term effect of key macroeconomics variables on the house prices. Further research should use of more observations.

6. REFERENCES

[1] Ahrentzen, S. (2008). Sustaining active-living communities over the decades: lessons from a 1930s greenbelt town. Journal of Health Politics, Policy and Law, 33(3), 429-453.

[2] Arman, M., Zuo, J., Wilson, L., Zillante, G., and Pullen, S. (2009). Challenges of responding to sustainability with implications for affordable housing. Ecological Economics, 68(12), 3034–3041. https://doi.org/10.1016/j.ecolecon.2009.07.007

[3] Aziz, W. N. A. W. A., Singaravelloo, K., Doling, J., & Hanif, N. R. (2014). Towards a housing policy in Malaysia. In Housing East Asia (pp. 140-161). Palgrave Macmillan, London.

[4] Baum-Snow, N., and Marion, J. (2009). The effects of low income housing tax credit developments on neighborhoods. Journal of Public Economics, 93(5-6), 654-666.

[5] Boshoff, D. (2010). The impact of affordability on house price dynamics in South Africa. Acta Structilia: Journal for the Physical and Development Sciences, 17(2), 126-148.

[6] Boyer, E. L., & Mitgang, L. D. (1996). Building Community: A New Future for Architecture Education and Practice. A Special Report. California Princeton Fulfillment Services; 1445 Lower Ferry Road, Ewing, NJ 08618.

[7] Burnham, R. (1998). Housing ourselves: Creating affordable, sustainable shelter. McGraw Hill Professional.

[8] Caldieron, J. (2011). Residential satisfaction in la perla informal neighborhood, San Juan, Puerto Rico.

[9] Chan, T. K. (2009). Measuring performance of the Malaysian construction industry. Construction management and Economics, 27(12), 1231-1244.

[10] Clement, O. I., and Kayode, O. (2012). Public housing provision and user satisfaction in Ondo State, Nigeria. British Journal of Arts and Social Sciences, 8(1), 103-111.

[11] Cummings, P. M., and Landis, J. D. (1993). Relationships between affordable housing developments and neighboring property values: An analysis of BRIDGE Housing Corporation developments in the San Francisco Bay Area. University of California at Berkeley, Institute of Urban and Regional Development.

[12] Delgado, A., and De Troyer, F. (2017). Housing preferences for affordable social housing projects in Guayaquil, Ecuador. International Journal of Housing Markets and Analysis, 10(1), 112-139.

[13] Delgado Wise, R., Marquez Covarrubias, H., and Puentes, R. (2013). Reframing the debate on migration, development and human rights. Population, space and place, 19(4), 430-443.

[14] De Souza Briggs, X., Darden, J. T., & Aidala, A. (1999). In the wake of desegregation: Early impacts of scattered-site public housing on neighborhoods in Yonkers, New York. Journal of the American Planning Association, 65(1), 27-49.

[15] Eriksen, M. D., and Rosenthal, S. S. (2010). Crowd out effects of place-based subsidized rental housing: New evidence from the LIHTC program. Journal of Public Economics, 94(11-12), 953-966.

[16] Freedman, M., and Owens, E. G. (2011). Low-income housing development and crime. Journal of Urban Economics, 70(2), 115-131.

[17] Free Malaysia Today (2019), PR1MA expo to offer over 600,000 houses.

[18] Galster, G. C., Tatian, P., and Smith, R. (1999). The impact of neighbors who use Section 8 certificates on property values. Housing Policy Debate, 10(4), 879-917.

[19] Goetz, E., Lam, H. K., and Heitlinger, A. (1996). There goes the neighborhood? Subsidized housing in urban neighborhoods. CURA Reporter, 26(1), 1-6.

[20] Goetz, E., Lam, H. K., and Heitlinger, A. (1996). There goes the neighborhood? Subsidized housing in urban neighborhoods. CURA Reporter, 26(1), 1-6.

[21] Gould Ellen, I., & Voicu, I. (2006). Nonprofit housing and neighborhood spillovers. Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management, 25(1), 31-52.

[22] Habitat, U. N. (2011). State of the world's cities 2010/2011: Prosperity of cities. Routledge.

[23] Harner, J., Huerta, E. J., & Solís, H. C. (2009). Buying development: Housing and urban growth in Guadalajara, Mexico. Urban Geography, 30(5), 465-489.

[24] Ibrahim, M. H., and Law, S. H. (2014). House prices and bank credits in Malaysia: An aggregate and disaggregate analysis. Habitat International, 42, 111-120.

[25] Jenkins, P., Smith, H., and Wang, Y. P. (2006). Planning and housing in the rapidly urbanising world. Planning and Housing in the Rapidly Urbanising World. https://doi.org/10.4324/9780203003992

[26] Kamal, E. M., Hassan, H., Osmadi, A., and Fatah, H. A. (2015). Housing price control: is it a way forward?. WIT Transactions on The Built Environment, 168, 1225-1235.

[27] Khairie, H. (2013). 40per cent gap between affordable housing supply and demand. Retrieved 15 December 2015, from http://ink.library.smu.edu.sg/cgi/viewcontent.c

[28] Lean, H. H., and Smyth, R. (2014). Dynamic interaction between house prices and stock prices in Malaysia. International Journal of Strategic Property Management, 18(2), 163-177.

[29] Lee, C. M., Culhane, D. P., and Wachter, S. M. (1999). The differential impacts of federally assisted housing programs on nearby property values: A Philadelphia case study. Housing Policy Debate, 10(1), 75-93.

[30] Lee, L. S., Choong, W. W., & Rosdi, B. A. R. (2010, April). Ten years review of malaysia my second home programme (MM2H). In International Real Estate Research Symposium (pp. 27-29). Kuala Lumpur.

[31] Lim, J., and Hyung Lee, J. (2013). Demographic changes and housing demands by scenarios with ASFRs. International Journal of Housing Markets and Analysis, 6(3), 317-340.

[32] Lyons, R. F., and Loveridge, S. (1993). An hedonic estimation of the effect of federally subsidized housing on nearby residential property values (No. 13377). University of Minnesota, Department of Applied Economics.

[33] Malpezzi, S., and Maclennan, D. (2001). The long-run price elasticity of supply of new residential construction in the United States and the United Kingdom. Journal of housing economics, 10(3), 278-306.

[34] Narayan, P. K., and Popp, S. (2010). A new unit root test with two structural breaks in level and slope at unknown time. Journal of Applied Statistics, 37(9), 1425-1438

[35] Nguyen, M. T. (2005). Does affordable housing detrimentally affect property values? A review of the literature. Journal of Planning Literature, 20(1), 15-26.

[36] Ong, T. S., and Chang, Y. S. (2013). Macroeconomic Determinants of Malaysian Housing Market. Human and Social Science Research Journal Human and Social Science Research HSSR, 1(2), 119–127.

[37] Opoku, r. and Muhmin, A. 2010, Housing Preferences and Attribute Importance among Low Income Consumers in Saudi Arabia, Habitat International, 34, 219-227

[38] Osmadi, A., Kamal, E. M., Hassan, H., and Fattah, H. A. (2015). Exploring the elements of housing price in Malaysia. Asian Social Science, 11(24), 26–38. https://doi.org/10.5539/ass.v11n24p26

[39] Phang, S. Y. (2010). Affordable homeownership policy: implications for housing markets. International Journal of Housing Markets and Analysis, 3(1), 38-52.

[40] Samad, D., Zainon, N., Rahim, F. A. M., and Lou, E. (2017). Malaysian affordability housing policies revisited. Open House International, 42(1), 44–51. https://doi.org/10.1051/matecconf/20166600010

[41] Santiago, A. M., Galster, G. C., and Tatian, P. (2001). Assessing the Property Value Impacts of the Dispersed Hounsing Subsidy Program in Denver. Journal of Policy Analysis and Management, 65-88.

[42] Schwartz, A. E., Ellen, I. G., Voicu, I., and Schill, M. H. (2006). The external effects of place-based subsidized housing. Regional Science and Urban Economics, 36(6), 679-707.

[43] Shatar, S. A., Othman, N., Yusof, N. A. M., and Mohamed, Z. (2017). Preliminary Review on Housing Policy and its Implementation in Malaysia. Journal of Science, Technology and Innovation Policy, 3(1).

[44] The edge (2017). PR1MA to showcase over 42,000 residential units during campaign.

[45] Weng, Y., and Gong, P. (2017). On price co-movement and volatility spillover effects in China's housing markets. International Journal of Strategic Property Management, 21(3), 240-255.

[46] Wood, J. (2007). Synergy city; planning for a high density, super-symbiotic society. Landscape and Urban Planning, 83(1), 77–83. https://doi.org/10.1016/j.landurbplan.2007.05.006

[47] World Cities Report. (2016).

[48] Yoong, Y. (2012). MM2H sees higher participation. Retrieved on 3 March 2014.