

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/338006272>

Housing Wealth and Consumption in Malaysia: New Evidence

Chapter · December 2019

CITATIONS

0

READS

289

4 authors:



Wang Li Wong

Xiamen University Malaysia

7 PUBLICATIONS 10 CITATIONS

[SEE PROFILE](#)



Chin Lee

Universiti Putra Malaysia

47 PUBLICATIONS 235 CITATIONS

[SEE PROFILE](#)



Kelly Wong

Universiti Putra Malaysia

23 PUBLICATIONS 30 CITATIONS

[SEE PROFILE](#)



Chee Lip Tee

Xiamen University Malaysia

8 PUBLICATIONS 13 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:

Project

A cost analysis model for agricultural machinery in Iraq [View project](#)

Project

trade cost [View project](#)

**Economic
Issues and
Policies
Challenges
in Malaysia**

Economic Issues and Policies Challenges in Malaysia

Editors

Lee Chin

Suryati Ishak

Nor Yasmin Bani



Universiti Putra Malaysia Press
Serdang • 2019

© **Universiti Putra Malaysia Press 2019**

First Print 2019

All rights reserved. No part of this book may be produced in any form without permission in writing from the publisher, except by a reviewer who wishes to quote brief passages in a review written for inclusion in a magazine or newspaper.

UPM Press is a member of the Malaysian Book Publishers Association (MABOPA) and a member of Majlis Penerbitan Ilmiah Malaysia (MAPIM).

Perpustakaan Negara Malaysia Cataloguing-in-Publication

ISBN 978-967-2395-20-1

URL://www.econ.upm.edu.my/penerbitan

Cover design:

Type face: Times New Roman PS

Type Size: 11/14.5

Contents

List of Tables		vii
List of Figures		ix
Preface		xi
CHAPTER 1	Economic Conditions and House Price in Malaysia <i>Jia-Seng Yap, Muzafar Shah Habibullah and W.N.W. Azman-Saini</i>	1
CHAPTER 2	Location Proximity and the Ripple Effect in House Price: A Case Study of Northern Region <i>Shiau-Hui Kok, NormazWana Ismail and Lee Chin</i>	25
CHAPTER 3	Housing Wealth and Consumption in Malaysia: New Evidence <i>Wang-Li Wong, Lee Chin, Kelly Kai Seng Wong and Chee-Lip Tee</i>	45
CHAPTER 4	Impact of Dengue Cases on Health Expenditure in Malaysia <i>Dorine Nwabiazili Ifenatuora, Norashidah Mohamed Nor and Renuka Devi Logarajan</i>	60
CHAPTER 5	An Examination of (De) Centralization of Malaysian Fiscal Federalism <i>Judhiana Abd Ghani and Norashidah Mohamed Nor</i>	73
CHAPTER 6	Fiscal Imbalance and Its Existence in Malaysia's Federal System <i>Judhiana Abd Ghani</i>	97

CHAPTER 7	Income Inequality and Economic Growth: A Panel Data Analysis in Malaysia <i>Alfred Khaw and Nur Syazwani Mazlan</i>	117
CHAPTER 8	The Determinants of Electricity Consumption in Malaysia <i>Wong Chun Yew and Suryati Ishak</i>	135

Housing Wealth and Consumption in Malaysia: New Evidence

Wang Li Wong, Lee Chin, Kelly Kai Seng Wong and Chee-Lip Tee

INTRODUCTION

The role of housing market in an economy is important in modern era as it will bring a huge impact to an economy. Housing as a necessity with no close substitution and everyone need it as a shelter in order to survive. There are two ways to own a house: rent or purchase. Therefore, housing is one of the biggest assets for most of the household and, in addition, house also act as financial assets (investment) due to financial innovation.

Therefore, household usually impacted most from consequences of increasing housing price. More interestingly, the impact could be two-fold: First, house price increase may benefits homeowner who can sell or refinance the house to obtain cash for consumption; second, increasing house price may harm potential homeowner by reduce consumption in order to save up more money to purchase a house, or even pay for the increasing rental.

Figure 3.1 shows the household consumption and Malaysian house price index from first quarter of year 2000 to fourth quarter of year 2018. Household consumption growth steadily across the years while house price growth steadily from year 2000 to year 2008 and picking up the pace thereafter.

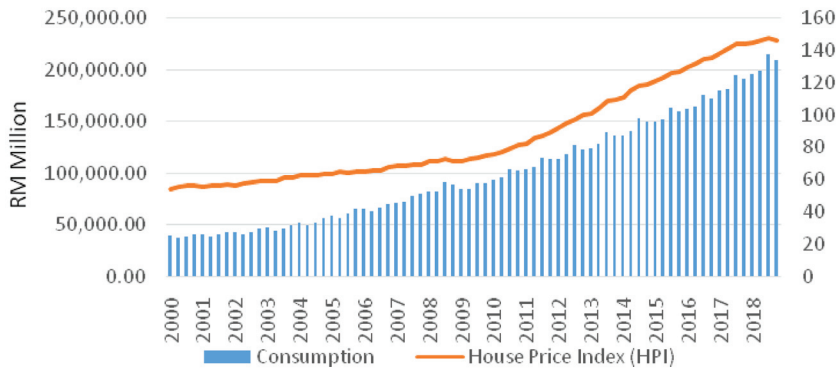


Figure 3.1 Malaysia's Household Consumption and House Price Index

The drastic increase in house price sparked a concern on its possible impact on Malaysian economy. One of the channels will be through housing wealth-consumption channel. The impact may not as simple as exact linear positive or negative impact, although there are several previous studies suggest that there is a linear relationship³. There are many factors may play an important role to explain the housing wealth-consumption channel. Homeownership may shape consumer's behaviour toward house price change. Homeownership in Malaysia stood at 59% in year 2010 (Characteristics of Living Quarters 2010, Department of Statistics Malaysia). It is relatively low as compared to few neighbouring countries, such as Singapore (91%), Indonesia (80%), Thailand (81%)⁴ and Philippines (77%). Figure 3.2 shows the Malaysian monthly household expenditure pattern. Not surprisingly, food ranked as highest expenditure for Malaysian, around 34% of total monthly expenditure and notably the second highest expenditure was Housing, fuel and power (24%), and followed by transport and communication (19%).

³Wong et al. (2015) found linear negative relationship between housing wealth and household consumption, whereas Ciarlone (2011) suggest there is a positive relationship.

⁴Thailand homeownership information obtained from Kritayanavaj, B. (2016). For more information, see Kritayanavaj, B. (2016).

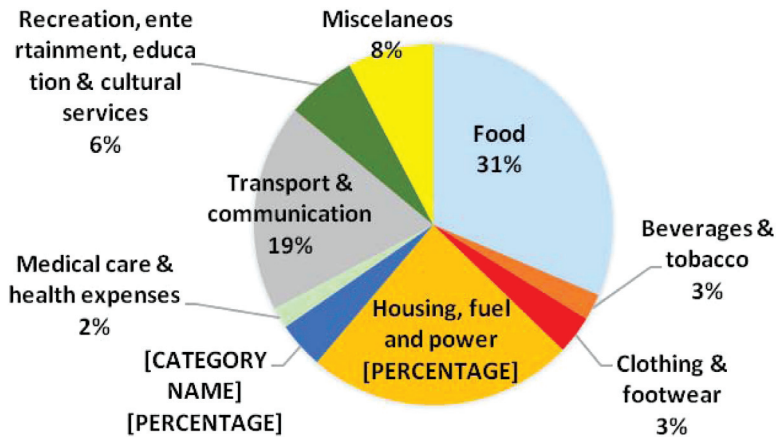


Figure 3.2 Percentage of Mean Monthly Household Consumption Expenditure by Main Group of Goods and Services in Malaysia 2016

Traditionally, homeowner most likely to spend more as they perceive they are wealthier after house price hike. However, potential homeowner will spend lesser to pay for a higher house price to achieve homeownership. Potential homeowner also may face higher rental rate at the same time which led by higher cost of housing. Both actions from these two different types of consumer may offset each other, and the net outcome of housing wealth on consumption will be ambiguous. In addition, there is also a possibility that the investor may react differently on house price changes, especially house price slump. Investor may not reduce consumption as house price slump will not affect their cash flow: bank will not be asking for more repayment and homeowner still paying same loan repayment despite the slump.

Besides, throughout years of financial deregulation and innovation in Malaysia, investors were exposed to variety of investments ever since. The inception of Real Estate Investment Trusts (REIT) in 2005 had changed the landscape of real estate investment; even small investor with thin capital are able to invest in this “cash-sucking” type of investment. Moreover, a year before in 2004, Cagamas Berhad, also known as National Mortgage Corporation of Malaysia has started to issue Residential Mortgage-Backed Securities (RMBS) to increase the liquidity in mortgage market; to enable banks lend more money to house buyer.

These events are believed to become the stepping stones for the blooming property market which begins from year 2008 until today. In other words, financial innovation enables the consumer to earn extra wealth from housing market therefore may channel to consumption. Nevertheless, if this positive relationship between housing wealth and consumption exists, housing wealth could stimulate an economy through consumption channel, but at the same time it also could bring harm if housing market slowdown or having downturn; it may also channel the impact back to the economy. Figure 3.3 shows the overall property transaction, volume and value of residential overhang in Malaysia from year 2012 to 2018. Despite the house price is still increasing in year 2018 (Figure 3.1), but Figure 3.3 shows property marking stated to slow down since 2014. Total property transaction drop from 384,060 unit in year 2014 unit to 313,710 unit in year 2018. New residential overhang also from 8,839 unit, valued at RM3.02 billion in year 2014, increase to 32,313 unit, valued at RM19.86 billion in 2018.

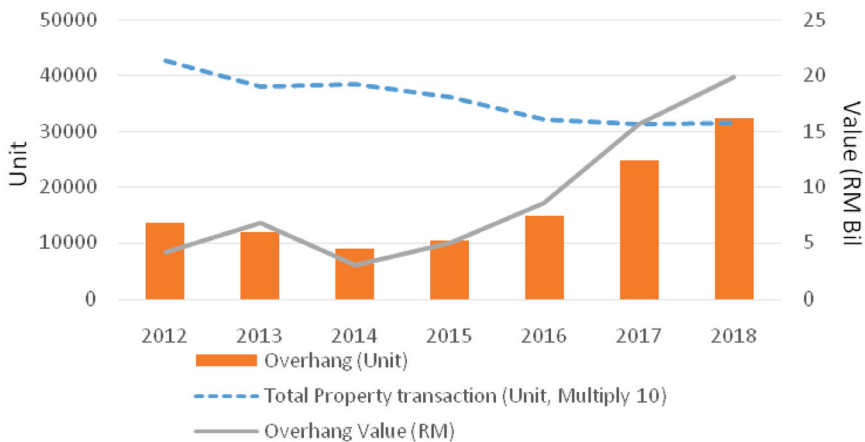


Figure 3.3 Total Property Transaction, Volume and Value of Residential Overhang in Malaysia

Malaysian government already taken several actions to revert the market slowdown, including urging the commercial banks easing the lending criteria as well as launching a 6-month Home Ownership Campaign

(HOC, January 2019 to June 2019) to wave or reduce the stamp duty for the purchase of new house range from RM300,000 to RM2.5 million.

As house price is high now and the housing market showing sign of slowing down, this paper is aims to examine in which manner housing market will impact economy through housing wealth-consumption channel. The impact of housing wealth on consumption remain ambiguous as financial innovation took place. To answer his question, we have to begin from the wealth components in consumption function.

LITERATURE REVIEW

Housing Wealth and Consumption

The impact of housing market was well known, especially after the eruption of sub-prime crisis. Various channels of housing impact were discovered in previous studies, particularly, consumption channel. The idea that household consumption is affected by wealth has been long known and agreed upon by both literatures and common sense (Permanent Income Hypothesis, PIH). Without wealth, there really isn't much for us to spend on. As early as the work of Modigliani (1971) already suggested that consumer spending increase at about five cents for every dollar increase in wealth (holding fixed labour income). Lettau and Ludvigson (2004) reported that most changes in asset value are not permanent (transitory) and thus uncorrelated with consumption. Wealth channel only exist when the changes in income or wealth are permanent (PIH holds). Having set this wealth-consumption relation clear, let's focus on the main concern of this paper. In this chapter, previous study of wealth, which consists of two components, which is housing and financial wealth will be discussed and compared which impact will be greater. Beside wealth, asset liquidity and credit constraints will also be considered in the review.

The relation between financial wealth and household consumption has been long known and agreed upon many researchers. The rationale behind it is that a crash in stock price will in turn decreases spending and push the economy further into recession. Housing wealth however has only recently come to the limelight and is believed to plays a major role in

the economy. Brueckner and Pereira (1996) note that many commentators identified falling house price will decrease homeowner wealth and in turn cause a more severe secondary decrease in household consumption than the original effect of income lost alone. But the housing wealth effect is not just bad news all alone.

Among studies on household consumption and the total wealth, marginal propensity to consume (MPC) out of total wealth are ranged from 0.02 to 0.08 in US, Canada, UK, France, Italy and Japan. (Boone et al., 1998; Boone et al., 2001; Macklem, 1994; Paiella, 2007; Tan and Voss, 2003). Besides, Laumas and Porter-Hudak (1992) discovered similar results, where the former authors conclude that PIH holds in India, while the latter discovered that income-induced wealth effect will affect consumption.

Housing Wealth and Financial Wealth

According to Klyuev and Mills (2007), increase in house price will encourage spending thus reduces saving in order to achieve a desired wealth level. Skinner (1989) also believe in the relation between housing and saving and noted that the windfall in housing price could possibly be the ignition spark for the saving slowdown in US during the late 1970s and 1980s. Fernandez-Corugedo et al. (2002) find a sizable transitory component to wealth by using UK data, and most of the adjustment to deviation from the long run relation occurs through wealth.

On the contrary, there are few similar studies also found that weak or no correlation between housing and financial wealth. For instance, Elliot (1980) found that non-financial wealth had no impact on consumption, and Levin (1998) found no relation between housing wealth and consumption in micro data study. Besides, the paper of Phang (2002) who investigates housing wealth effect on consumption in the case of Singapore came with an insignificant result. The author states that the restriction imposed by the government authorities limit the collateral effect thus limit the wealth channel.

Asymmetry Housing Wealth on Consumption

The assumption of linear relationship between housing wealth and consumption could be vague as homeowner may react differently between house price hike and slump. Márquez et al. (2013) criticized the assumption of consumption behave in a same manner to negative and positive wealth shock. The authors also suggest that loss aversion of consumer may lead to a different speed of reaction towards negative and positive shock; utility function of these consumer will be assumed concave for gain of wealth, while convex for loss of wealth. The author also cited the work of Shirvani and Wilbratte (2000) to further support his argument of the asymmetry relationship, where housing wealth gained by disposing real property will be taxed, while losing money will not be taxed. The wealth gained not fully realized and channel to consumption but losing money will fully reflect on the consumption. Therefore, it is feasible to test for the asymmetry relationship between these two variables.

Credit Constraints

Why consumer credit one may ask. Although the main concern of this paper is to look at the housing wealth effect on consumption, the consumer credit is important from the financing point of view. Nowadays various types of consumer loans were open for consumer and credit card issues by various banks are replacing cash as a medium of transaction. Consumer can obtain a loan and credit card easily nowadays. Bacchetta and Gerlach (1997) state that credit constraints will affect consumption negatively. The existence of various consumer credits from bank, such as personal loan and credit card will help consumer who demand for credit, especially those with liquidity constraints. Once they obtain liquidity assist from bank, they will spend it and increase consumption.

Through previous literature, many researchers have concluded that housing wealth has significantly affected household consumption in the long run. However, further research has to be conducted before one may assume the same for Malaysia. Malaysia unlike US or UK and has a slightly stricter financial structure. The financial structure in Malaysia does not allow one to 'cash out' their perceive earning easily unless the house is

actually sold or refinanced. But selling and refinance need a longer period to gone through the procedures. Thus, homeowners are unable to enjoy the appreciation in their housing investment immediately. In addition, we shall not ignore the possible asymmetry effect between housing wealth and consumption. Ignoring asymmetry effect may lead to inferior policy implication. So, the result of this paper might generate some different outcome which contrasts with previous study.

METHODOLOGY

The liberalization measures that announce by Bank Negara Malaysia (BNM) in year 2009 had brought a tremendous change in Malaysian financial market. A higher limit foreign equity was allowed for Islamic bank, investment banks and insurance company. At the same time, financial institutions are also given various operational flexibility. All these are intended to increase liquidity as well as foreign governance to enhance the competitiveness of local financial market. This financial liberalization, together with the financial innovation property investment, may bring certain degree of impact on housing market and its participants.

In the earlier research of Wong et al. (2015), the authors used quarterly data from year 1999 to 2011. The model specification is shown as below:

$$CONS = \beta_0 + \beta_1(GDP) + \beta_2(HW) + \beta_3(FW) + \beta_4(LCN) + \varepsilon_t \quad (3.1)$$

whereby *CONS* is total consumption, *GDP* represents disposable income, *HW* represents housing wealth, *FW* represent financial wealth and *LCN* represents credit constraints⁵. Notably, β_0 is autonomous spending, β_1 , β_2 , β_3 , is MPC for , and respectively and is parameter for credit constraints.

Financial innovation and liberalization are believed to become the drivers of the blooming of property market. And these may bring certain degree of impact to housing market and change the behavior of the participants. By re-evaluate the housing wealth effect using latest data

⁵Total consumption uses quarterly aggregate household consumption as proxy and income uses quarterly real GDP as proxy. Housing wealth uses housing price index and financial wealth uses quarterly Kuala Lumpur Composite Index (KLCI) as. Credit constrain uses total consumer loan as proxy in quarterly basis

(2000 – 2017, Quarterly), we found an asymmetry effect of housing wealth on consumption. To test asymmetry effects of housing wealth, Unrestricted Non-linear Autoregressive Distributed Lag (NARDL) proposed by Shin et al. (2014) is adopted. Similar variables as previous are used in the study, the model specification is shown as below:

$$CONS = \gamma_0 + \gamma_1(GDP) + \gamma_2(HW) + \gamma_3(LEN) + \gamma_4(HW^+) + \gamma_5(HW^-) + v_t \quad (3.2)$$

where HW^+ and HW^- are partial sums of positive and negative changes in housing wealth. Partial sums of positive and negative changes are shown as:

$$HW_t^+ = \sum_{i=1}^t \Delta HW_i^+ = \sum_i^+ \max(\Delta HW_i, 0) \quad (3.3)$$

and

$$HW_t^- = \sum_{i=1}^t \Delta HW_i^- = \sum_i^- \max(\Delta HW_i, 0) \quad (3.4)$$

Based on above formulation, is long run coefficient which capture the relationship between consumption and housing wealth increase and is long run coefficient which capture the relationship between consumption and housing wealth reduction.

RESULTS AND DISCUSSIONS

Cointegration relationship was found by using Johansen Multivariate Cointegration Test. Table 3.1 shows the estimated long-run coefficient, there is a negative relationship between consumption and housing wealth. This result contradicts with most of the previous studies. The housing wealth indicator used in the model was the housing price indicator which can represent wealth as well as price. In this case, the price effect is greater than the wealth effect from the consumer's point of view. Since a house is a necessity, and there is no substitute, increasing housing price will cause a potential house buyer to save more by decreasing consumption in order to buy the house, rather than to "cash out" the property which increases consumption. In addition, the only way to "cash out" the property in Malaysia is to sell off or refinance property, and this process involves high transaction costs as this help keep house owners from doing so; thus, the wealth channel is stifled and is not realized by the house owner.

Table 3.1 The Estimated Long-run Coefficient

Method	Johansen	Standard Error
GDP	0.730**	0.118
HW	-0.383**	0.139
FW	0.097**	0.031
LEN	0.144**	0.052

Note: 5% significant is shown as **.

Besides, an increasing housing price will increase the transaction costs of a house, such as a down payment, stamp duty, legal fees, property valuation cost, and so on. All these transaction costs are based on the value of the property, and this increase will further burden the potential house buyer. This finding is also consistent with that of Paiella (2007), whereby an increasing housing price will depress renter's spending if the renter is saving to buy a house. It will also weaken the housing wealth effect of the house owner's positive effect on consumption.

Table 3.2 shows the asymmetric long-run coefficient which derived from Unrestricted NARDL Bound Test. Wald test result in Table 3.2 shows that there is asymmetry effect from housing wealth on consumption. From the results, consumption react differently between house price hike and slump. Housing wealth increase consumption significantly but it is no significant relationship when housing wealth adjust downward. It can be interpreting as: 1) When housing price going up, consumer will benefit from their housing equity or investment and thus increase spending; 2) While house price going down, consumer have mix or no reaction towards it, since the negative wealth or capital loss on housing is unrealized and no direct impact to consumer's cash flow before they sell their house or investment.

This wealth channel is believed to actuated by the financial liberalization and innovation which began in year 2004, and the most significant changes will be on year 2009. Investors able to invest in property market easily ever since due to lower capital requirement and more liquidity in mortgage market. Therefore, there is no coincident that housing market started to boom at the same time. Nevertheless, this also open up a future research topic that need to be answer in further research.

Table 3.2 The Estimated Asymmetric Long-run Coefficient

Variable	Coefficient	Standard error
Constant	2.788**	0.571
GDP	0.522**	0.069
LEN	0.144**	0.067
SW	0.051	0.032
HW ⁺	0.453**	0.034
HW ⁻	-0.642	0.392

Wald Test			
Variable	Hypothesis	F-statistics	Conclusion
HW	$H_0: \Omega^+ = \Omega^-$	0.0159**	Reject H_0 Asymmetric
	$H_0: \Omega^+ \neq \Omega^-$		

Notes: ** denotes as significant at 5% significance level. The figure in parenthesis represents the standard error.

In addition, Malaysia housing market also yet to encounter or experience any drastic and continuous downward price adjustment⁶. Overall housing price still exhibit an uptrend despite the transaction volume started to slow down. Perhaps this “house price forever increases” phenomenon already commonly known by Malaysian, therefore they perceive the downward price adjustment is just merely a ripple and will recover very soon, thus, consumer relatively not concern about the downward adjustment as compared to upward adjustment. Another possibility would be the previous found negative relationship was being offset. A potential buyer could be a property investor; when house price reduces, they do not have to pay a high price to own a house and suppose able to have more money to spend. But unfortunately, house price slump also leads to losses in property investment such as REIT or other property investments. This could reduce their cash flow or even their investment for down payment: wealth is being

⁶ There is only five downward adjustment within the sample period: 2001:Q1 (-1.18%); 2002:Q1(-0.2%); 2003:Q1(-0.28%); 2005:Q3(-0.6%); 2008:Q4(-1.83%).

offset. Although this unique asymmetric relationship was found within the latest sample period, we shall not ignore the earlier studies that shows different results: It is dynamic we shall not assume this relationship will last forever.

In a nutshell, it is feasible to implement policies to encourage homeownership due to several factors: 1) Homeownership is relatively low as compared to neighbouring countries; 2) Higher housing price could depress the spending ability of potential homeowner. 3) Stability in housing price able to reduce uncertainty in consumption, thus lead to a more stable economy. 4) Despite housing price still increasing, government already implemented several policies to prevent housing market further slowing down. By far the more promising policies would be the HOC campaign and slashing interest rate in May 2019. These send out a strong message to public on the determination of government to revive the housing market as well as the economy. This is also a proactive measure which trying to deal with the incoming housing supply. According to The Edge Property (2019), there are 451,544 units of incoming supply and 453,784 units of planned supply, a total of 915,328 units of future supply will be ready for next several years.

The biggest challenge ahead for government is to come out a new policy after the current HOC which will be ended in June 2019 to absorb those overhang unit as well as the future supply. Indeed, HOC is a very effective campaign to promote housing transaction, however, the timeframe is too short for potential buyer. House buying decision and process can be very time consuming. From identify a suitable location and house types to applying loan from banks and eventually further legal process, all this action shall not be in a hurry or else house buyer may shy away despite lucrative discounts. Perhaps prolong the HOC campaign would be a great idea to let more potential buyer to absorb the over hanged unit effectively.

Government also need to take note that any structural change in financial sector will channel directly to housing market. Before any new financial policy being implemented, government shall consider the impact on housing market as these two sectors were rely on each other and could bring tremendous impact to economy. Sub-prime crisis in 2008 would be

a great lesson on how these two sectors brought down the entire world economy.

CONCLUSION

This study discusses the impact of housing market on economy through consumption channel. The discussion includes comparing the past and current relationship of housing wealth and consumption as well as the challenges of government in making housing policies. In summary, housing wealth exhibit a negative relationship in the past (1999 – 2011) due to the wealth channel is stifled, consumer perceive house price increase as housing cost increase, thus reduce spending. However, the scenario had turned into an unexpected manner, where an asymmetric relationship found in the current state (2000 – 2017). This probably due to the financial innovation that began in year 2004 and afterward financial liberalization in year 2009. These two events had changed the landscape of both housing and financial market by providing more liquidity in mortgage market and more convenient property investment vehicle. This increase the involvement of investors (also consumer) in property market and increased the convenience of refinance the property to “cash out” the property capital gain, therefore lead to the awaken of previously-stifled wealth channel. Recent government policies which trying to revive the slowing housing market is feasible but there are rooms for improvement. Massive amount of future housing supply, which might be a hidden bomb in the future and should be taking care of. The ideal policy should be promoting stable growth in housing market so that consumer will spend their wealth and promote a stable economy growth.

REFERENCES

- Bank Negara Malaysia (2009). Liberalisation of the Financial Sector. Retrieved from http://www.bnm.gov.my/index.php?ch=en_press&pg=en_press&ac=415&lang=en
- Bacchetta, P., & Gerlach, S. (1997). Consumption and credit constraints: Some international evidence. *Journal of Monetary Economics*, 40, 207-238.

- Badan Pusat Statistik. Indicators of Housing 1993-2017. Retrieved from <https://www.bps.go.id/statistictable/2009/03/12/1537/indikator-perumahan-1993-2017.html>
- Boone, L., Giorno, C. & P., R. (1998). Stock market fluctuation and consumption behaviour: Some recent evidence. *Organisation for Economic Cooperation and Development Economics Department*, 208.
- Boone, L., Girouard, N. & Wanner, I. (2001). Financial market liberalization, wealth and consumption. *Organisation for Economic Cooperation and Development Economics Department*, 308.
- Brueckner, J. K. & Pereira, A. M. (1996). Housing wealth and the economy's adjustment to unanticipated shocks. *Regional Science and Urban Economics*, 27(4-5), 497-513.
- Ciarlone A. (2011). Housing wealth effect in emerging economies. *Emerging Markets Review*, 12, 399-417.
- Department of Statistics Singapore (2018). Household. Retrieve from <https://www.singstat.gov.sg/find-data/search-by-theme/households/households/latest-data>
- Elliott, J. W. (1980). Wealth and wealth proxies in a permanent income model. *The Quarterly Journal of Economics*, 95, 509-535.
- Fernandez-Corugedo, E., Price, S., & Blake, A. (2002). The dynamics of consumer expenditures: The U.K. consumption ECM redux, *Bank of Engl, and Working paper*, 204.
- Klyuev, V. & Mills. P. (2007). Is housing wealth an ATM? The relationship between household wealth, home equity withdrawal and saving rate. *IMF Staff Paper*, 54, 539-561.
- Laumas, P. S. & Porter-Hudak, S. (1992). Wealth, income, and consumption in a developing country. *Journal of Macroeconomics*, 14, 349-358.
- Lettau, M. & Ludvigson, S. C. (2004). Understanding trend and cycle in asset values: Reevaluating the wealth effect on consumption. *American Economic Association*, 94, 276-299.
- Levin, L. (1998). Are assets fungible? Testing the behavioural theory of life-cycle savings. *Journal of Economic Behaviour & Organization*, 36, 59-83.
- Macklem, R. T. (1994). Wealth, disposable income and consumption: Some evidence for Canada. *Bank of Canada Technical Report*, 71.
- Márquez, E., Martínez-Cañete, A. R. & Pérez-Soba, I. (2013). Wealth shocks, credit conditions and asymmetric consumption response: Empirical evidence for the UK. *Economic Modelling*, 33, 357-366.

- Modigliani, F. (1971). Monetary policy and consumption: Linkages via interest rate and wealth effects in the FMP model. *Federal Reserve Bank of Boston Conference Series*, 5, 9-84.
- Paiella, M. (2007). Does wealth affect consumption? Evidence for Italy. *Journal of Macroeconomics*, 29, 189-205.
- Phang, S. Y. (2002). Housing prices and aggregate consumption: Do they move together? Evidence from Singapore. *Journal of Housing Economics*, 13, 101-119.
- Philippine Statistics Authority (2018). Housing Characteristics in the Philippines. Retrieved from <https://psa.gov.ph/content/housing-characteristics-philippines-results-2015-census-population>
- Shin, Y., Yu, B. & Greenwood-Nimmo, M. (2014). Modelling asymmetric cointegration and dynamic multiplier in a nonlinear ARDL framework, In: Sicles, R. C. and Horrace, W. C. (Eds.), *Festschrift in Honor of Peter Schmidt: Econometric Methods and Application*, Springer, pp. 281-314.
- Shirvani, H. & Wilbratte, B. (2000). Does consumption respond more strongly to stock market declines than to increases. *International Economic Journal*, 14, 41-49.
- Skinner, J. (1989). Housing wealth and aggregate saving, *Regional Science and Urban Economics*, 19, 305-324.
- Tan, A., & Voss, G. (2003). Consumption and wealth in Australia. *Economic record*, 79, 39-56.
- The Edge Property (March, 2019). The state of Malaysian housing supply. Retrieved from <https://www.edgeprop.my/content/1484910/state-malaysian-housing-supply>
- Wong W. L., Law, S. H., Said, R., Lee, Chin, (2015). Consumption and housing wealth: A Malaysian case that demonstrate a negative relationship. *International Journal of Economics and Management*, 9, 163-180.