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Dear Professor Chang

We are pleased to inform you that your paper co-authored with Shu-Mei Chen, and entitled “The dilemma of Housing Demand in Taiwan” has been accepted for publication in the *International Real Estate Review*, assuming that you will be willing to make some minor editorial revisions if our copy editor deems them necessary.

We ask that you comply fully with the “submission guidelines”, which we are enclosing for your convenience. Please pay particular attention to the sections entitled **Headings**, **Exhibits** and **Footnotes**. Please make sure that you sign the enclosed copyright release form and return to me together with the final version of the manuscript in Microsoft Word either via e-mail or facsimile.

We wish to express our sincere gratitude to you for allowing us an opportunity to review your manuscript. As with all other high quality journals, we rely heavily on the submission of outstanding articles like yours to maintain and improve the reputation and readership of the Journal.

Again, we thank you very much for considering the *International Real Estate Review* as the outlet for your fine research. We look forward to receiving more papers from you in the near future.

Sincerely,

Rose Neng Lai
Executive Editor

The Dilemma of Housing Demand in Taiwan

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This paper discussed the dilemma of housing demand in Taiwan. First, three high features of housing market in Taiwan are introduced. This paper explored the dilemma of high housing vacancy rate, high housing prices and high home ownership. Secondly, we explored the motivation and preference of housing purchase. Since the housing price-income ratio keeps increasing, the unaffordable housing prices make households suffer from poor life quality. The issues of housing justice are highlighted. Recently, the demographics and social value have changed fast. Even the homebuyers have to pay unaffordable housing price, they prefer to buy housing instead of renting due to the traditional culture of “having land, having wealth”. It results in the conflict phenomenon of high home ownership rate and high housing prices. On the other hand, the low holding cost of housing and unbalanced development between urban and rural keep housing vacancy rate high in housing market. It results in unhealthy housing market and misallocation of resources. This paper proposed suggestions for the government policy making.

Keywords

Housing Demand, Taiwan, Housing Price, Housing Vacancy Rate, Home Ownership Rate

1. Introduction

The coexistence of high housing prices and high home ownership rate in Taiwan has been in conflict. While the housing prices are highly unaffordable, what seems to be the dilemma is the high home ownership rate in Taiwan, 85.36% in Taiwan and 84% in Taipei in 2016. The unreasonable housing price-income ratio has become a heavy burden to the homebuyers. The problems of housing vacancy have existed in almost all metropolitan areas in Taiwan. Many housing owners would rather keep the housing vacant instead of releasing them when the rent is low and there are chances of bad tenants and management difficulties. The low mortgage interest rate and property taxes in Taiwan have created a welcoming environment for holding property. The more housing vacancy is, the lower housing prices are. The problems of high housing prices, high owner occupancy and high housing vacancy are common in the major cities in Taiwan but with different degrees. The three high features of housing market reveal the inefficient housing market with unutilized property and inappropriate allocation.

This study aims to contribute to some feasible suggestions to the impediment of the three high features of housing market for the government when developing the reform policies. The three high features of the housing market reflect the dilemma of the homebuyers who hope to purchase housing while cannot afford the prices. Moreover, the three high features of housing market also reveal the inefficient housing market with unutilized property and inappropriate allocation. Despite the different characteristics of local housing markets in Taiwan, this study shows the common trend of high housing prices, high home ownership, and high housing vacancy rate. The study provides analysis of this specific phenomenon in the housing market and explores the impact on the society. Some feasible solutions are suggested to improve the functioning of the housing market.

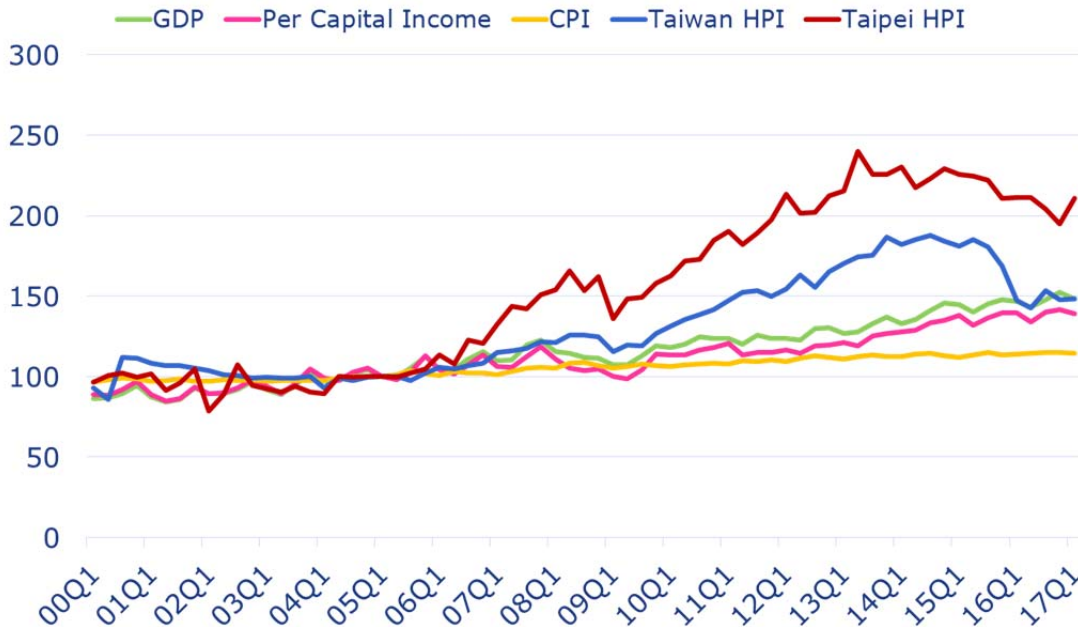
2. Housing Market Dilemma in Taiwan

2.1 Three High Features of Housing Market in Taiwan

Despite the stable prices in Taiwan, the rising rate of housing prices still exceeds greatly than that of people's income. The housing prices have been climbing in Taiwan, which has been skyrocketing in Taipei in particular. While the housing prices keep rising sharply, GDP and per capital income grow gradually and consumer price index remains steady. When the rate of housing prices increase exceeds that of per capital national income and CPI, the soaring housing prices

have thus become a prominent phenomenon. Figure 1 shows the gradual rise of housing prices from 2000 to 2017.

Figure 1 The Relation of Taiwan Housing Prices and GDP

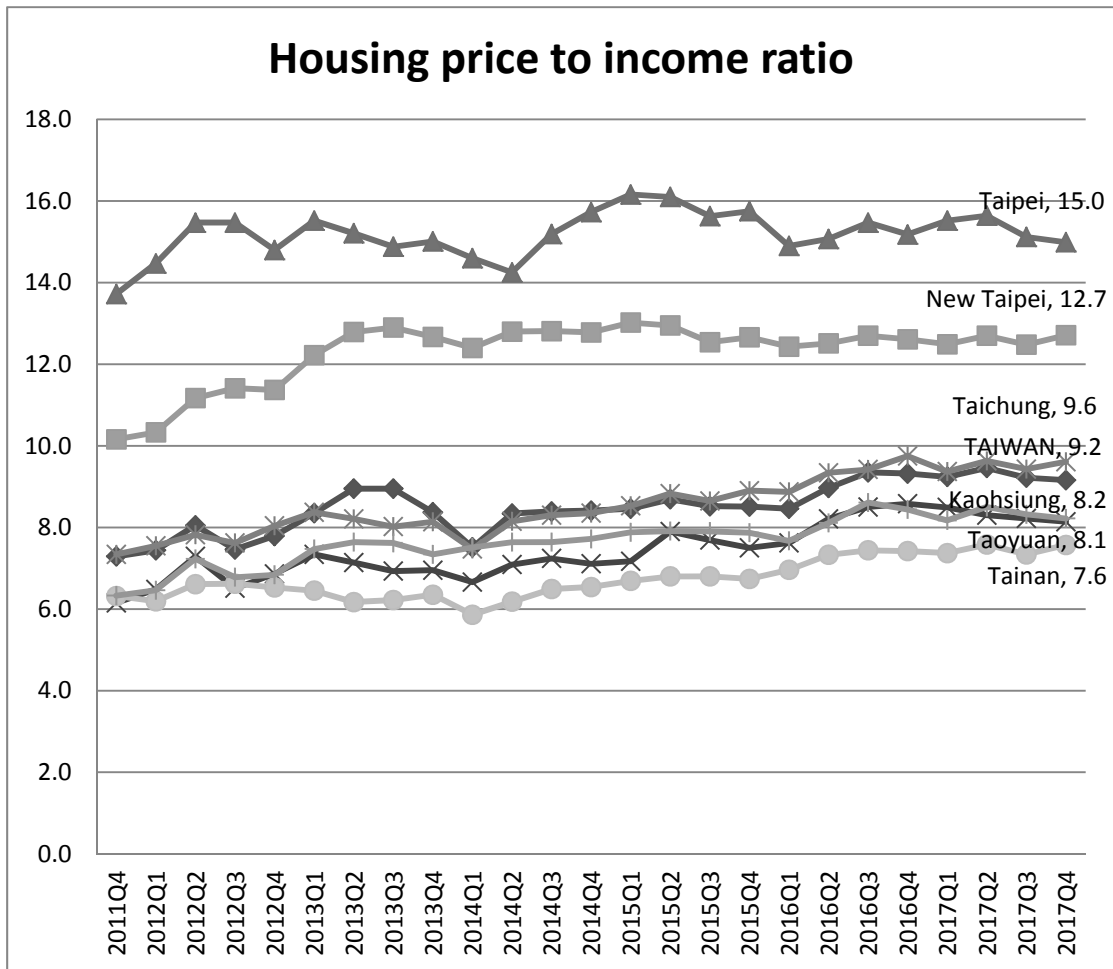


Source: The data of GDP, Per Capital Income, CPI come from the Directorate-General of Budget, Accounting and Statistics, Executive Yuan, Taiwan. The HPI comes from the housing price index of real estate information platform, Ministry of Interior (M. O. I.), Taiwan.

The price-income ratio in the six municipalities is 7 times higher than that of the average in Taiwan, which is unaffordable compared with the international standard. High price-income ratio has become a common phenomenon in Taiwan with different degree. It has become more difficult for the young and middle class people to purchase housing with unaffordable prices.

The soaring housing prices have added to the burden of housing purchase. According to the third quarter of 2017 Housing Affordability Index released by Construction and Planning Agency of Ministry of Interior (M. O. I.), the average housing price- income ratio is 9 times in Taiwan, 7.6 times in Tainan, 12.7 times in New Taipei and almost 15 times in Taipei. With the rising housing prices, housing price-income ratio keeps growing. The housing prices become more and more unaffordable (Figure 2).

Figure 2 The Trend of Housing Price-Income Ratio in Taiwan and 6 Municipalities



Source: 2017 Housing Affordability Index, Construction and Planning Agency of Ministry of Interior, Taiwan.

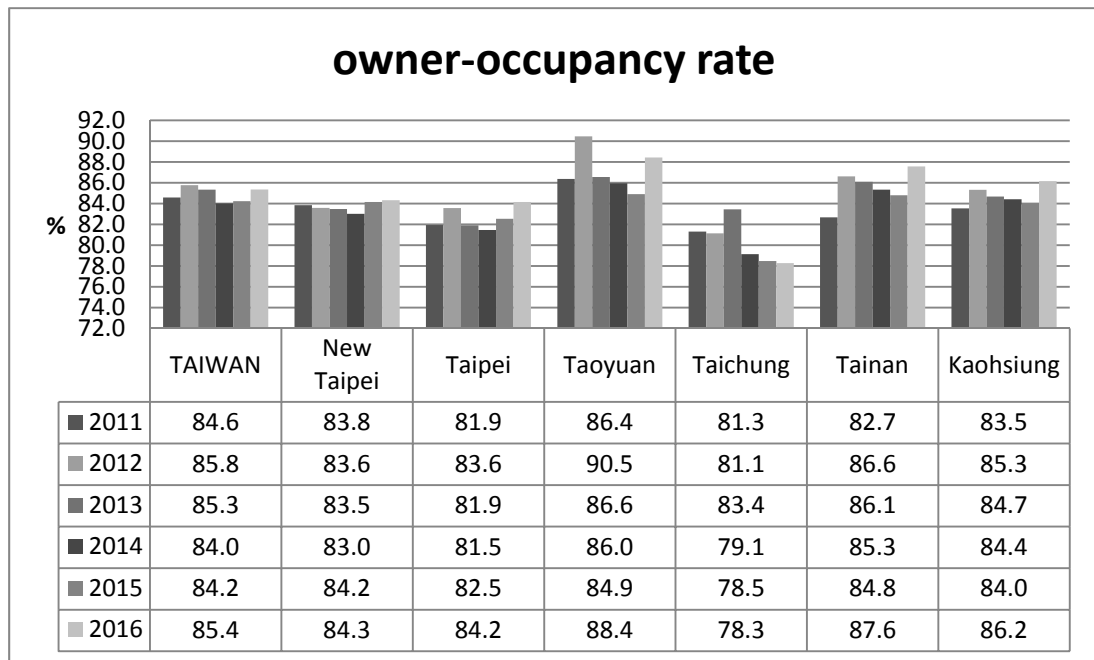
According to the 14th Annual Demographic International Housing Affordability Survey (2018), Hong Kong is the least affordable, with a Median Multiple of 19.4, followed by Sydney at 12.9, Vancouver at 12.6, San Jose at 10.3 and Melbourne at 9.9 (Table 1). That the housing prices in Taipei are on a par with those of the least affordable cities in the world highlights the unreasonable housing price-income ratio in Taipei, which has become a heavy burden to the homebuyers.

Household income is fundamental to housing affordability and the base value of housing prices. According to Chang et al. (2009) on housing bubbles in Taipei, Taiwan, where home ownership rate is high, with the rise of housing prices in

2008, the housing bubble prices are close to 38% of the housing prices. While the per capital of national income is not as high as those of the other countries, the housing prices to income ratio is close to those of the least affordable cities, which poses negative influence on housing demand.

The coexistence of high housing prices and high home ownership rate in Taiwan has been in conflict. While the housing prices are highly unaffordable, what seems to be the dilemma is the high home ownership rate in Taiwan, 85.36% in Taiwan and 84% in Taipei in 2016 (Figure 3). The high home ownership rate attributes to the traditional culture that “to have land is to have wealth”. People in Taiwan prefer to purchase housing instead of renting. Housing is also a common and popular commodity of investment. Because of the low rental housing quality, the incentives of government’s low home mortgage interest rate policy and low property taxes, most of the Taiwanese prefer to purchase housing. Hua (2001) indicated that the continuous supply of housing and the government’s policy of subsidizing home mortgage interest have raised the rate of home ownership. It is also a common phenomenon that parents purchase housing for their children. Home ownership is defined as the households living together in the residence owned by the family members in Taiwan. Therefore, high home ownership rate not only reflects the high demand of ownership or investment. It also reflects the traditional Chinese family value of shared property and housing owned by the family members.

Figure 3 Owner-Occupancy Rate in 6 Municipalities and Taiwan



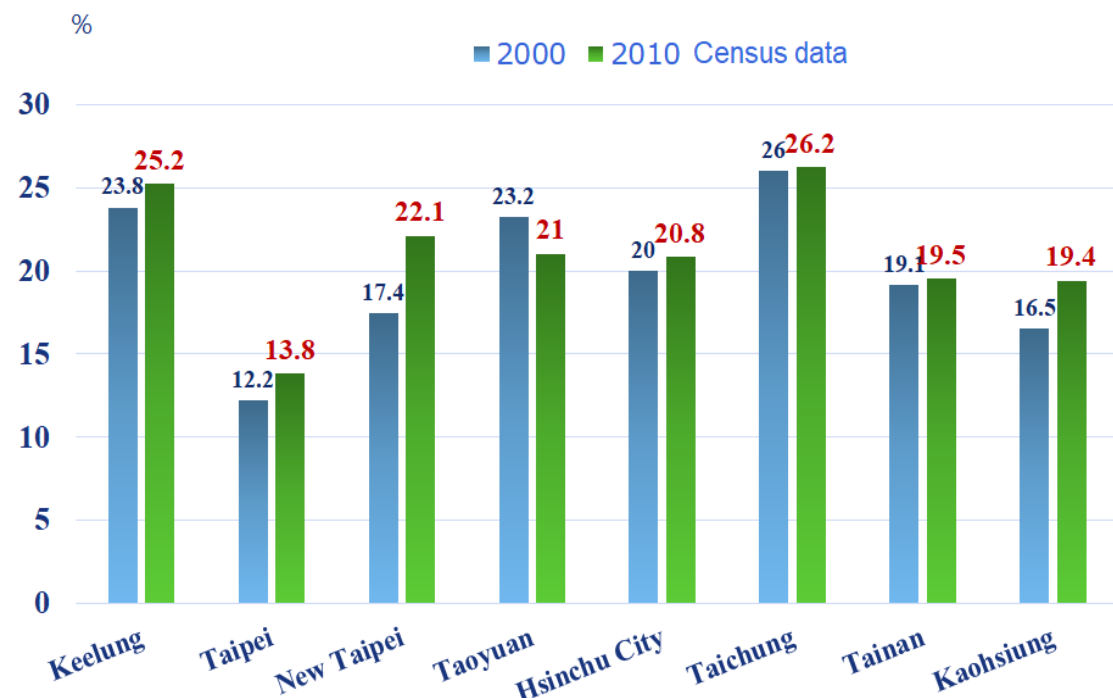
Source: The data of owner-occupancy rate comes from the Directorate- general of budget, Accounting and statistics, Executive Yuan, Taiwan.

The problems of housing vacancy have existed in almost all metropolitan areas in Taiwan. The more housing vacancy is, the lower housing prices are. With fewer industry activities and lower housing demand in the smaller urban areas, the housing vacancy is higher and housing prices are lower. According to the census of Ministry of Interior, the housing vacancy rate in Taipei is 13.8% in 2010, which is the lowest among the special municipalities in Taiwan. However, compared with the 5% of natural vacancy rate, it is still high (Figure 4). Peng (2005) pointed that vacancy rate and the change of housing prices were negatively correlated. The low level of urban development in rural areas in Taiwan reveals the higher housing vacancy rate in rural areas. However, the gap of housing demand between urban and rural areas is another issue. Hua (2017) further pointed out that sluggish urban renewal was the main factor for excessive housing supply. Over the past decade, the new housing was about 100 to 120 thousand units per year, most of which were newly constructed instead of the reconstruction of demolished housing. Given that, housing vacancy keeps rising while the problems of poor quality old housing still cannot find the way to renew. Vacancy is one of the main reasons for low housing prices.

The problems of high housing prices, high owner occupancy and high housing

vacancy are common in the major cities in Taiwan but with different degrees. There is not much foreign investment demand in Taiwan's housing market because of the lower return in the housing rental market compared with other cities in the world. Furthermore, Taiwanese laws have strict stipulations on property purchasing from China. Only the Chinese people who work or have important investment in Taiwan can purchase a housing unit for own occupancy, which cannot be used as rental or non-residence and which cannot be transferred within three years after purchasing. Therefore, it is not easy for Chinese buyers to purchase or invest property in Taiwan. Over all, the housing market in Taiwan is more a closed domestic market whose high housing prices does not relate to the investment from China.

Figure 4 The Changes of Housing Vacancy in the Main Cities in Taiwan



Source: The data comes from the population and housing census in 2000 and 2010, Ministry of Interior, Taiwan.

2.2 The Quantity and Quality of Housing Demand in Taiwan

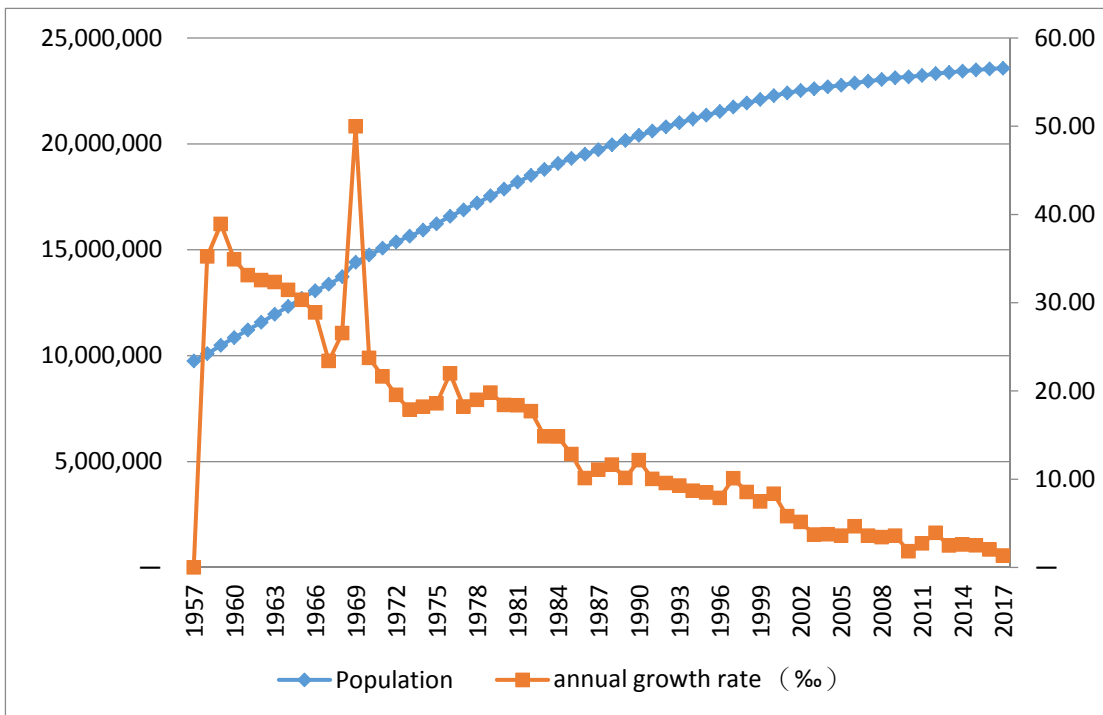
(1). Housing demand is decided on the growth of population

The changes of demographics have some impacts on housing demands. Population growth in Taiwan has been diminishing growth. According to the

statistics from the Department of Household Registration, M.O.I., the total population in Taiwan increases from 21,742,815 in 1997 to 23,571,227 in 2017. However, the growing rate decreases from 10% in 1997 to 1.33% in 2017 (Figure 5).

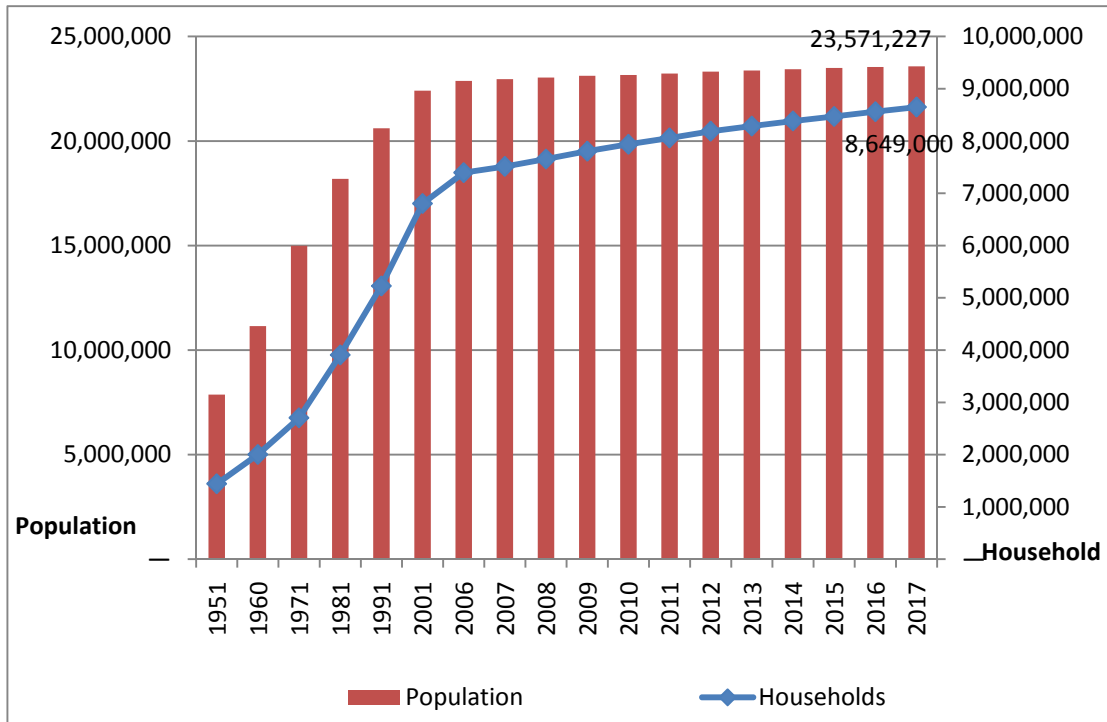
The population growth has been stagnating in recent years. With the trends of aging society, late marriage and low birth rate, the households keeps growing (Figure 6). According to the statistics of Dept. of Household Registration, M.O.I., the average household members decline from 5.56 per household in 1960 to 2.72 per household in 2017. It reveals that the family structures in Taiwan have changed from nuclear families to families with fewer members. Although the population growth has been stagnating, housing demand is decided on the quantity of households. The change of family structures influences the housing demand and consumption. Small housing will be the main type of product in the housing market of high prices and small households.

Figure 5 Population growth Trends in Taiwan



Source: Statistics from the Department of Household Registration, M.O.I., Taiwan.

Figure 6 Trends of Population Growth and Household Growth in Taiwan

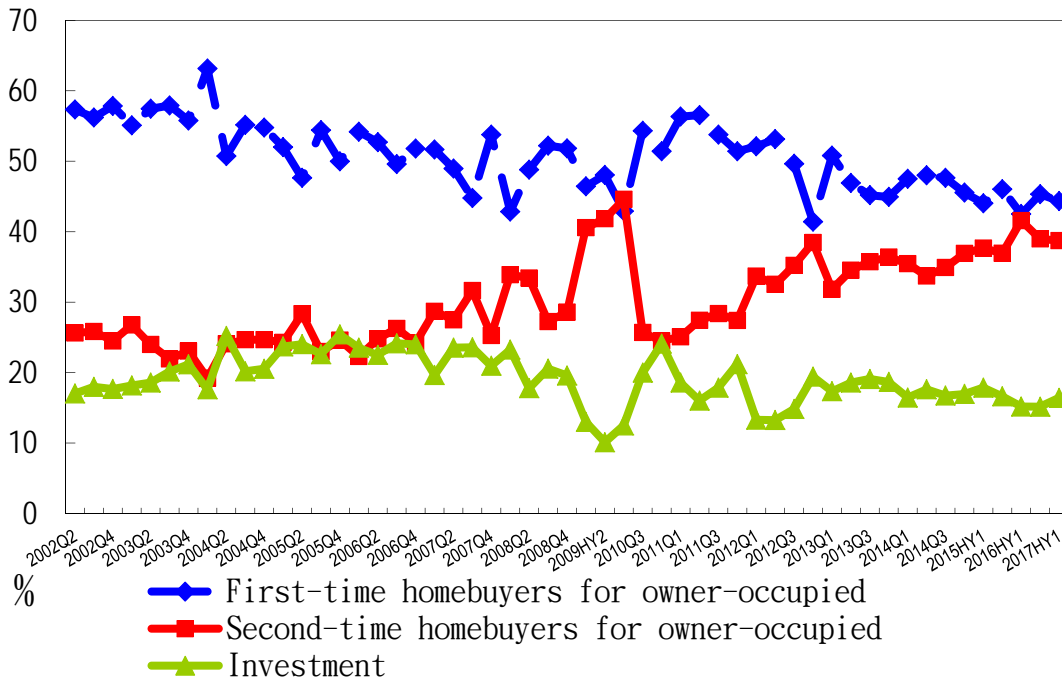


Source: Statistics from the Department of Household Registration, M.O.I., Taiwan.

(2). Consumption motivation

Because of the unaffordable housing prices and the change of demographics, first-time homebuyers have been decreasing while second-time (or more) homebuyers have been increasing. Meanwhile, with the reform of real estate transactions income tax, purchasing property for investment has decreased. Owner-occupancy is the main demand in the current housing market in Taiwan. Recently, the first-time homebuyers have decreased slightly because of the high housing prices. On the other hand, second-time (or more) homebuyers for owner-occupancy have been increasing. According to the housing demand survey conducted by Ministry of Interior, first-time homebuyers for owner-occupancy account for 44.3% in the first half year of 2017, 38.7% for the second-time (or more) homebuyers, and 16.4% for investment, among which owner-occupancy accounts for 83% (Figure 7). Property investment has decreased slightly after the government increased the real estate transactions income tax. Hence, living quality and owner-occupancy are the main consumption motivation.

Figure 7 Property Purchase Motivation Trend



Source: Housing demand survey of the first half year of 2017, Construction and Planning Agency, Ministry of Interior.

(3). Reasons of housing purchase for owner-occupancy and non-owner-occupancy

Quality of the living environment is one of the main concerns for most of the homebuyers in urban areas in Taiwan. Urban renewal is not an easy task in Taiwan, which contributes to the considerable old housing. 34 % of the house buyers for owner-occupancy purchase housing for better living environment. In contrast, the property investment buyers who expect to profit from capital gain have decreased because of the increase of the real estate transactions income tax. 33% of the house buyers for non-owner-occupancy purchase housing for rental, followed by value keeping or profit gaining (28.3%). The change of motivation of non-owner-occupancy helps drive the housing market to rental use, which also provides chances for rental market development (Table 1).

Table 1 Comparisons of the Main Factors Influencing House Purchasing of Owner-Occupancy by Cities

Unit: %

Main Factor	Average	Cities					
		Taipei	New Taipei	Taoyuan	Taichung	Tainan	Kaohsiung
Improving living environment	34.0	29.3	32.2	34.0	40.5	34.3	33.9
Children	16.8	17.8	18.6	20.8	14.7	13.1	15.7
Parent	8.4	8.3	7.5	7.9	7.7	10.6	8.5
Employment	13.1	14.9	11.7	12.2	12.4	16.3	10.5
Marriage	21.6	22.1	24.1	21.1	18.9	21.5	21.4
Recreation / Retirement	4.8	5.4	4.6	2.6	4.2	3.5	8.9
Miscellaneous	1.3	2.2	1.3	1.3	1.5	0.6	1.2

Source: Housing demand survey of the first half year of 2017, Construction and Planning Agency, Ministry of Interior.

(4). The preference of housing type and scale

The preference of housing types and scales are different in urban and rural areas in Taiwan because of the degree of urbanization and land supply. In the urbanized areas such as Taipei City and New Taipei City, the housing prices are higher and apartment buildings are the preferred type. While in Taoyuan, Taichung, Tainan and Kaohsiung, where the housing prices are more affordable, townhouses are preferable, among which Tainan has the highest demand (49.6%), followed by Taichung (45.5%) and Taoyuan (38.9%). See table 2.

Moreover, demographic structure has been changing in Taiwan. Population growth increases very slowly while the household quantity increases in Taiwan. Because the numbers of the household members decreases, people prefer to choose medium-sized and small-sized housing. According to the housing demand survey, the preferred apartment size ranges from 83 m² to 116 m² (39.5%), followed by 116 m² to 149 m² (23.4%), and 50 m² to 83 m² (16.0%). Apartment size ranging from 83 m² to 116 m² is also the main demand in all areas, among which New Taipei City has the highest demand (44.9%). The demands for size less than 83 m² in New Taipei City (27.4%) and Taipei City (26.6%) are higher than those in central and southern Taiwan. See table 3.

Table 2 Comparisons of the Expected Housing Types by Cities

		Unit: %					
Housing Type	Average	Cities					
		Taipei	New Taipei	Taoyuan	Taichung	Tainan	Kaohsiung
Townhouse	29.4	4.4	4.0	38.9	45.5	49.6	30.6
Apartment without Elevator	12.7	23.4	18.0	9.0	8.2	9.6	8.6
Apartment with Elevator	57.2	71.6	77.4	51.0	45.7	39.5	60.9
Others	0.7	0.6	0.5	1.0	0.6	1.2	0.0

Source: Housing demand survey of the first half year of 2017, Construction and Planning Agency, Ministry of Interior.

Table 3 Comparison of the Expected Housing Size by Cities

		Unit: %					
Size	Average	Cities					
		Taipei	New Taipei	Taoyuan	Taichung	Tainan	Kaohsiung
Less than 50m²	1.3	1.2	2.7	0.8	0.9	1.2	1.0
50 m²– 82 m²	16.0	25.4	24.7	10.8	11.4	11.4	13.3
83 m²- 115 m²	39.5	42.8	44.9	39.3	34.2	36.8	39.0
116 m²- 148m²	23.4	18.9	19.7	24.4	25.1	26.9	25.0
149 m²– 181 m²	8.0	5.7	2.9	8.3	10.5	9.2	11.7
182 m²– 214 m²	6.9	3.6	3.2	7.8	10.2	9.4	6.5
More than 215 m²	4.9	2.4	1.9	8.6	7.6	5.1	3.6

Source: Housing demand survey of the first half year of 2017, Construction and Planning Agency, Ministry of Interior.

3. Causes for the Dilemma

3.1 Causes for the High Housing Prices

Enormous property buyers for either owner-occupancy or investment are one of the main factors of high housing prices and even housing bubble prices. When housing becomes a marketable commodity, property buyers would expect to gain

profit from property investment. However, owner-occupancy homebuyers, subjected to income, would choose the most appropriate housing to maximize the benefits of their property. From the perspectives of rent profits and household income, Chang et al. (2009) developed the model of fundamental house value to analyze housing bubbles. They applied the State-Space Model to test the housing bubble price. Their findings revealed that the bubble existed in Taipei from 1988 to 1990, and the bubble accounted for 47% of the housing price from the housing income model and 54% from the rent model. Moreover, housing prices in Taipei rose in 2008 and the bubble prices estimated by the income model was close to 38% of the housing price (27% by the rent model). These revealed the housing bubbles at that time given the close estimates from either the housing income model or the rent model. The rental market in Taiwan is different from that in other countries. With the traditional ideas that “to have land is to have wealth”, homebuyers would rather pay for long-term home loans even though their income is not sufficient for high housing prices. Tenure choice model cannot totally account for this phenomenon. Teng et al. (2017) also reported that bubble prices have diffused from the Taipei City center to the surrounding New Taipei City.

3.2 Causes for the High Home Ownership Rate

People in Taiwan, regardless of income, prefer to possess their own property because of the traditional culture. Enormously high housing appreciation profits is also one reason that property has been a favored investment target among all other investment tools.

Unaffordable high housing prices generally discourage homebuyers from purchasing property. However, high housing prices and high homeownership exist alongside one another in Taiwan. Applying the idea of the individual household housing price-income ratio (PIR), Lin et al. (2014) used the ordinary least squares model and quantile regression to analyze different micro PIR household characteristics. The empirical results revealed that general homebuyers with higher budgets and lower permanent incomes, who have purchased new houses with large space and located in downtown areas, tend to exhibit relatively higher micro PIR. However, homebuyers with high micro PIRs may have high budgets and low income, and might purchase housing for investment. Therefore, PIR is not a precise indicator of housing affordability in Taiwan. Other factors to account for high housing prices and high housing affordability include the family support and finance other than income in the Chinese society.

Chen et al. (2007) applied four tests to examine the long-run equilibrium relationship between housing prices and household income. Their research revealed that slow increase in income and volatile housing prices attributed to the long-run equilibrium relationship between them. Besides, temporary monetary variables and housing prices were significantly correlated after the financial liberation in Taiwan. Deviation of housing prices and income becomes a specific phenomenon of Taiwan that the capital supply stimulates the rise of housing prices.

3.3 Causes for the High Vacancy Rate

The low mortgage interest rate and property taxes in Taiwan have created a welcoming environment for holding property. According to the regional statistics among Asian countries on the web of Global Property Guide, the gross rent multiplier (GRM) in Taipei is the highest in Asia. That housing rent is negligible compared to high housing prices reveals that housing appreciation profits far exceed the rent revenues. Many housing owners would rather keep the housing vacant instead of releasing them when the rent is low and there are chances of bad tenants and management difficulties (Table 4). Property taxes also have some impacts on housing investment. The land value tax and housing tax used to be low for the owners in Taiwan. The costs of owning real estate were lower than the cost of owning a car. Besides, mortgage interest rate in Taiwan is lower than 2% and the Flexible-Payment Mortgage is available for repayment. Because of the low mortgage interest rate and low cost of holding housing, the property investment buyers do not need to use the rent to offset the operating cost and the expenditure, which attributes to the high housing vacancy rate of the investment property.

Table 4 GRM and Property Returns in Main Countries/Regions around the World

Country/region	Rent Multiplier (Year)	Rental yields (%)
Taiwan	64	1.57
China	48	2.10
Hong Kong	38	2.62
Singapore	39	2.54
Malaysia	27	3.72
Japan	38	2.66
Thailand	19	5.13

Source: Global Property Guide

4. The Impacts of the Dilemma on Housing Demand

4.1 The Characteristics of Housing Demand Decision in Taiwan

In the past, families with three generations living together were the traditions of filial piety in the Chinese society. However, a lot of families living together base on main concerns to save the living expenses because of the high housing prices in today's society. When households make mobility decisions or housing adjustment, they generally consider household demands, the limitation of income, and quality of the living environment. The extended families with three generations living together are the traditional family type with more family members and more sources of income. Mobility decisions have to meet the needs of different generations. First generation with higher social and economic status usually has more influence on decision-making. Family tie and the principle of filial piety in the Chinese society are more important when making mobility decisions. The second generation with inferior financial capacity would choose to live with the first generation instead of moving out. However, the first generation usually make the decision according to the demand of the second and third generations (Chang et al., 2003), which reveals that the mobility decisions of married couples are influenced by financial support from their parents.

4.2 Life-Cycle Hypothesis and Adjustment of Housing Demand

Households usually adjust their housing demand to the change of life cycle. When the households intend to improve their residential quality, different factors will be considered such as more working opportunities in Taipei urban areas, housing prices and their income. New Taipei City and Taoyuan City have become favorable choices for households with limited income, where more affordable housing units are available. The housing markets with different housing prices have been separated into different submarkets according to variety of purchasing power. Chen & Chang (2002) indicated that household income and life cycle influenced mobility decisions. Households make decisions of moving paths to the different environments. Therefore, housing markets have different segments. Housing in suburban (Taipei County) is relatively cheaper to attract young population while housing with good school districts and convenient comminuting system in Taipei City attracts families looking for good living environments. There are different housing demands in the housing market.

Chen et al. (2004) revealed that the choices of residential quality depend on the stages of family life cycle and the household would therefore adjust properly to choose suitable housing units to fit their needs. Young stages of family life cycle, maybe the first-time homebuyers, are less likely to move upward than those with school-age children. Families of the elderly are more likely to move to small-space housing because of fewer family members, or move to the suburbs where housing is cheaper when they retire. It is found that the choices of residence vary in accordance with different status of family life cycle and housing needs. Moreover, income is a key factor of housing demand. Households of sufficient financial status have the capacity to decide on moving upwards for bigger living space and better quality.

The housing affordability index among the six metropolitans in Taiwan varies great. The constraints of income and demands of life cycle influence housing demands. Young households choose to move to New Taipei City and Tao-yuan City, suburbs of Taipei City, because of the unaffordable housing prices in Taipei City. This has created the one-day living sphere in the northern Taiwan that people work in Taipei City but buy property in New Taipei City and Taoyuan City. Although people spend more time and money on commuting, population in these areas keeps increasing. However, high housing prices lead the population outflow from Taipei City, which makes Taipei City have the most elderly people among the six metropolitans.

4.3 Impact of High Housing Prices on Fertility Behaviors

Purchasing housing and bearing children are important decisions for households, both of which require enormous spending. To increase the sense of belonging, the birth of children motivates property purchasing. However, high housing prices and high cost of bearing children lead to the exclusion effects. Unaffordable housing prices seem to be the factor of low birth fertility. High housing prices in some of the cities in Taiwan not only affects the housing demand but also fertility behavior. According to Lin (2015), the probability of first-time home buying increases with a gradual decrease after the household's birth of the first child, which means that the exclusion effects weaken over time. The effects of resource exclusion and motivated stimulus change over time and there exist different effects in terms of the order of house buying and fertility behaviors. Even though the family members increase and there is need of larger living space, the consumption of the family resources delays the change of housing. However,

the shorter time of purchasing housing for family with children indicated their strong need of housing, which lowers the effects of resource exclusion of fertility behavior. One of the reasons might be the expectation of higher prices made them decide to purchase housing as soon as possible. The burden of high prices is thus heavier than that in the normal price period.

Lin & Chang (2016) explored the possible consequences of household housing purchase on fertility behavior. The results revealed that when housing was viewed as a commodity in daily life, the cost of housing purchase would take up more household resources causing a resource exclusion effect on childbearing, which reduced the rate of fertility and lead to the phenomenon of “dare not having children after buying housing.” On the other hand, when housing is viewed as a precondition of childbearing, the cost of housing purchase would be part of the cost of having a child, which leads to the situation of “no house no children.” It was found that many married young couples who could not afford high housing prices still lived with their parents. Compared with the married couples who did not purchase housing, it took longer time for the couples who purchased housing to bear a child, especially when purchasing housing with soaring prices. Lack of the resources from different generations, it took longer time for the married couples living in the rental housing to bear a child, compared with those who lived with their parents.

Fertility behavior is extorted when housing purchase excludes the costs of childbearing. It is a unique phenomenon that the housing market has the negative influence on population growth, which also highlights the negative effects of unreasonable housing prices.

4.4 Impact of High Housing Prices on the Housing Arrangement for the Elderly

High housing prices in the urban areas are changing the traditional family values that the elderly live with their children in the same residence. Unaffordable housing prices has become one of the main factors that the elderly cannot depend on their children and share the same residence. Housing demand decides on the number of households. While it is common for three generations sharing the same residence in the Chinese society, the ideas of shared property and co-residence influence the decision of housing tenures. For the relief of high living expenses in urban areas, the elderly are more likely to live with their children in urban areas, where there are more good school districts and employment opportunities.

Because of the traditional Chinese family values that the elderly rely on their children when they are in need, it is expected that more elderly would move to live with their adult children in late life. However, with the soaring housing prices in urban areas, many young married couples purchase or rent housing only big enough for their own family with no spared space for their parents. Thus, more and more elderly are unable to live with their adult children (Chang & Chang, 2010). The economic factors have become more important in the modern society. Economic power and autonomy are two main factors influencing the transition of the living arrangement of the elderly. Some elderly would rather live alone or with their spouse to keep their economic power and autonomy; others with less resources could not exchange their economic power and autonomy for co-residence with their adult children. While it costs more to live in the urban areas, it is less likely that the elderly in the urban areas live with their adult children.

5. Possible Solutions to the Dilemma

5.1 The Fundamental Nature of Housing Should Be Consumption

Housing has the dual characteristics of consumption and investment. While housing is fundamental to people's life, there should be sufficient housing with quality for people to choose from. Meanwhile, housing is a commodity for trading, which can be used as an investment tool for assets. Following the socialistic philosophy of Dr. Sun Yat-sen's landownership policy, Taiwan implemented the Equal Land Rights Regulations after World War II. However, with the traditional Chinese culture that "to have land is to have wealth", people are eager to own property. When land and housing are marketable commodities, it has skewed influence on housing demand. The government should construct a tax system to de-commodify land and housing, collecting taxes on the profit gaining from the transaction of land and housing, all of which could be used on the public facilities for the society (La Grange et al., 2005). The land appreciation taxes in Taiwan were so low that the tax of asset appreciation was barely collected, which encouraged the commodification of housing and land, and the investment on property. Unlike other commodities for investment, the beneficiaries would be the powerful minority when land and housing are commodified. However, it has negative influence on the middle class and the disadvantaged people. Therefore, establishment of relevant policies would be required.

5.2 Decrease Demand of Housing Investment and De-Commodify Housing to Solve the Dilemma of Housing Demand

The failure of housing market has great impact on the households' house adjustment behaviors. We suggest the following specific policies which need to promote: to expand the gap of the mortgage rate between owner-occupancy and non-owner-occupancy for protecting the demand of the owner-occupancy house buyers, to collect high property taxes on real estate from non-owner-occupancy, to collect higher income taxes on those who reap profit from price appreciation from short-term transactions, and to provide lower mortgage ratio and higher interest mortgage rate on non-owner-occupancy demand. With these policies, it could widen the differences in transaction costs and holding costs between owner-occupancy and none-occupancy. It requires policy intervention to direct the housing market to the normal development.

5.3 Improve the Mechanisms of the Housing Market, Use the Vacant Housing Efficiently and Promote the Transparency of Real Estate Information

High housing vacancy is a waste of resource in the urban areas in Taiwan, which is especially serious in the rural areas and country. It is suggested that the government provides transparent and complete information of the housing market, especially that of the vacant and for residential use. Appropriate measures should be applied to encourage the lease of vacant housing in the rental market to solve the housing problems of the young people and disadvantaged people in the urban areas. It will solve the problems of the waste of housing resources at the same time. Moreover, developing more industries and reinvigorating economy in the rural areas and the smaller cities are critical to solve the housing vacancy.

5.4 Improve the Rental Market and Provide Multiple Subsidies for Disadvantaged Families

High homeownership rate and high price-rent ratios highlight the problems of high housing prices and low housing rent. Because most of the households prefer to own residence, rental housing demand is lower, which leads to low housing rent. Besides, the poor quality of rental housing also discourages most of the households from renting. It is suggested that the government set out legislation of

the rental housing market, explicitly setting out the rights and duties of the landlords and tenants, providing incentives of taxes and loans for housing repairing, and prosecuting illegal housing and poor rental housing to improve the rental market. Only when the rental market provides high quality rental housing and reasonable rent would the people like to rent instead of purchasing housing. Furthermore, when the low-income and economically disadvantaged people are more likely to be rejected in the rental market, the government should provide multiple rental housing subsidies and increase the quantity of social housing for those unable to purchase or rent appropriate housing from market.

6. Conclusion

The problems of the three high housing dilemmas have existed in the major cities all over Taiwan but with different degrees. The justification belongs to the macro level. The study has provided some feasible solutions to the common phenomenon for the government as reference when making relevant housing policies.

We suggest the government policy have clear definition that housing is defined as home ownership instead of marketable commodity. Different home mortgage interest rates and taxes should be applied to self-occupancy and non-occupancy homebuyers. As for the housing vacancy in the urban and suburbs, it is suggested that the government provide transparent housing market information and increase the housing demand generated from the industrial development. As for the soaring housing prices, it would be more practical and efficient to establish and develop a healthy rental housing market except for the instrument of raising income.

High housing price-income ratio is a problem in the major cities in Taiwan. The unaffordable housing prices in Taiwan are almost on a par with the least affordable cities in the world such as Sydney, Vancouver and Hong Kong. However, high home ownership is attributed to fewer investment channels in the past as well as the traditional culture of home ownership because property is a favorable and important heritage to children in Taiwan like most of the other Asian countries. People's heavy investment on property results in high owner-occupancy and the pursuit of property investment profit. Meanwhile, over investment leads to high housing vacancy. Moreover, low property taxes in the past and low housing rental revenues are other two causes of high housing

vacancy. Although high housing prices and high home ownership also exist in the major cities in China, high housing vacancy and low rental revenues are two characteristics specific in Taiwan but with different degrees.

The study makes a major contribution to the analysis of the three high features that are specific in Taiwan's housing market. Freehold property right means the outright ownership of land or property for an unlimited period in Taiwan while China and Hong Kong only lease the use of land with limited duration (leasehold system). Despite the different property and land system, similar unaffordable housing problems exist in these areas. The study suggests that the government propose effective measures to avoid the malfunctioning of the housing market. The three high housing features have caused the young, disadvantaged and even middle-class people having great difficulties in purchasing property. Excessive capital and investment in the housing market are also misallocation of resources, which impedes the normal development of economy. This study suggests the government adopt measures and propose policies to de-commodify land and housing, which coincides with the recent state policy of the Chinese government, who has ordered to crack down on flipping property and illegally raiding profit from property investment to maintain a stable and healthy housing market. In addition, housing prices and housing vacancy are the results of supply and demand in the market. The government is obliged to propose relevant policies to solve the problems. Social housing and multiple subsidy measures are solutions for young and disadvantaged groups to reach affordable housing. Moreover, this study also suggests the government disclose clear and update housing information so that the homebuyers would not be in the disadvantaged status because of asymmetric information. The suggestions proposed in this study would be served as valuable reference of solving the problems of high housing prices and high housing vacancy, which are applicable in any cities with similar housing problems.

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