

## **A Preliminary Study on Re-examining Housing Demand from a Homeownership Perspective in Taiwan**

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### **Abstract**

Since the last decade, the peculiar phenomenon of high housing price, high vacancy rate, and high homeownership rate has occurred due to the changes of housing market and socio-economic conditions in Taiwan. On one hand, the housing supply keep increasing while on the other hand, the housing demand from middle-income families remain unsatisfied due to the ever-increasing housing price. The unbalance between supply and demand in housing markets result in the queries about how homeownership affects the housing market and how we could adjust housing policies.

*This study re-examined the correlation between housing demand and homeownership, and analyzed its influence on housing market from institutional and economic aspect. Findings show that housing policies in Taiwan have a fundamental stand for advocating homeownership during every developing period, causing the unbalance of housing tenure of choice. From economic perspective, it is concluded that high homeownership rate in Taiwan is affected by anticipation of high house price increment as well as the low taxation of owner-occupied housing, and form a self-reinforcing cycle along with housing price and vacancy. It is expected that further study would use a tenure choice model to estimate the change of the factors to housing demand so as to provide evidence for the theoretical argument.*

### **1. Introduction**

Since 2000, the homeownership rate in Taiwan has climbed to 85 percent in 2013, which is one of the highest homeownership rates in the world (Figure 1). Nevertheless, the housing market has both high housing prices and a high vacancy rate. This peculiar phenomenon reveals a doubt that the housing supply does not meet the housing demand.

What role does the government play in the housing market under the circumstances? The conventional notion of where there is soil, there is a wealth has affected the civic perception of homeownership in the past. Most people considered buying a house as an objective over a lifetime. Policy making, however, was supply-driven, fortifying the preference for homeownership. After the 1990s, real estate was considered the pioneer industry that promotes economic growth. In order to keep real estate active, lenient housing policies stimulated housing supply and demand by market mechanisms, causing the deterioration of housing commodification and an imbalance between housing demand and supply in Taiwan. Not until recently has the government advocated social housing and by enacting the Housing Act in 2011, showing the housing policy's change to demand-oriented development (Huang, 2013).

Past reviews of research indicate that homeownership has positive impacts on society. Roche (1997) pointed out that higher homeownership means a sounder housing finance system, which give citizens easier access to mortgages to purchase their own houses. Coulson (2002) concluded that homeownership has a positive impact on living environment, child rearing, and civic behaviour. However, these arguments are from European and American perspectives. Moreover, their building types, housing

demands, and social environments are significantly different from those in Asian countries.

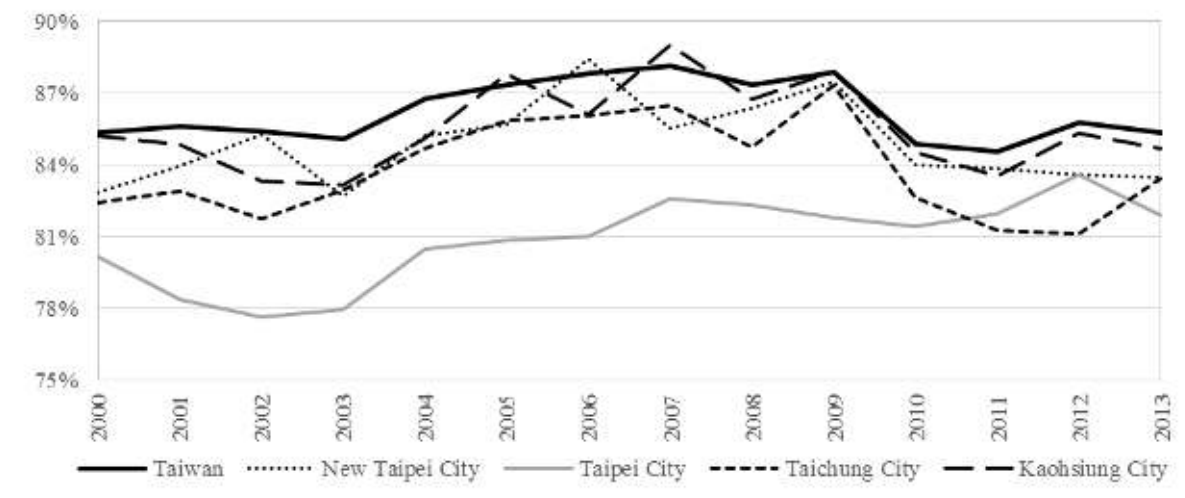


Figure 1. Homeownership Rates, 2000-2013.

Source: Income and Expenditure Survey of Taiwan, 2000-2013.

Note: Before 2010, homeownership rates were considered as the percentage of self-owned houses considering housing tenure. The term "self-owned" means owned by household members and their lineal relatives. From 2010, the term is amended to owned by household members who usually live in this house in accordance with the definition of 2010 Population and Housing Census.

This study raises the argument that high homeownership in Taiwan neither has a positive impact on the housing market nor is the only target that policies should follow. In order to verify this argument, our study provides a conceptual framework for re-examining the housing demand from a homeownership perspective. In the first section, the literature on the development process of housing policy and homeownership is reviewed. Then we explore the economic context for homeownership in the second section. As the relation between homeownership and housing market is presented, we conclude with a judgement on whether or not homeownership brings benefits to Taiwanese society.

In the last section, a discussion on how homeownership applies to the evaluation of housing demand in Taiwan is presented. According to the regulations of central, municipal, and county housing plans, the basic concern within housing policy change is the evaluation of housing demand. Nevertheless, the current method using households as the amount of demand does not take demand reality into account. Moreover, the non-equivalence between supply and demand became apparent after the reorganization of Taiwan administrative regions in 2010, which turn five counties into municipalities (Hsiao et al., 2012). This study seeks an objective method to establish a better understanding in homeownership. Using tenure choice as a mathematical model, it constructs a housing demand model and provides evidence for housing policy making.

## 2. The foundations of Housing Policy and Homeownership in Taiwan

A nation's housing policy is the foundation affecting housing demand and supply. Homeownership also depends on regulations. In 2013, only 43% of people owned their houses, while 57% choose to rent (Statistisches Bundesamt, Wiesbaden, 2013). This low homeownership rate, compared with most European countries, comes from heavy property tax and a reliable rental market that the government provides. On the one hand, the rate of homeownership in U.K. was 64.6% (Eurostat, 2013). But the

government hindered housing supply over a long period of time, and supply fell short of demand, making it more difficult for citizens to have a home of their own.

The development of homeownership in Taiwan differs from other countries. The conceding housing policy and the conventional notion of owning a house is better may make homeownership a better choice of the housing tenure in Taiwan, leading to a situation that leasehold market is of little account to the housing market. Following are the four major development periods in Taiwan:

### **2.1 1950s-1970s: Provisional Housing Supply Policy**

This period occurred when the R. O. C. Central Government retreated to Taiwan. Almost 2 million people flooded into Taiwan. On top of that, a military conflict between China and Taiwan arose from political tension. The R. O. C. Central Government did not take the initiative in formulating housing policy, but only provided shelters (becoming the so-called military dependents villages ) as a temporarily handling the military immigrants.

Due to this method of dealing with insufficient housing, the National Government enacted the Loan for Constructing Public Housing Act in 1957, serving as the predecessor to the Public Housing Act. Before it was annulled in 1975, the government built around 12.6 thousand public dwellings and sold them to low-income households at cost price (Lin W. I., 2006). Overall, the shelters was merely a way to settle the military immigrants down regardless of their living quality. As for the other citizens, the lack of a comprehensive housing policy was not the major concern.

### **2.2 1970s-1990s: Economic-oriented Development**

After the aforementioned conflict ceased, the R. O. C. Central Government emphasized economic development. In order to stabilize the rise in housing prices and inflation due to the Oil Crisis of the 1970s, the government enacted the Public Housing Act in 1975, and promoted a Six-Year Economic Development Plan, which provided at least 10 thousand public dwellings. In 1979, the Housing and Urban Development Bureau was established to process related business.

The government revised the Public Housing Act in 1982, given the lack of public housing funds.

Construction conducted by the people themselves with government loans , and encouraging private investment were added, hoping to release the government s bu private capital. On the one hand, the government also expected to build public housing on a large scale to stabilize housing prices, making it possible to achieve the goal of every d their own (Mii F. K., 1988). The government constructed 4.7 thousand dwellings

Compared with the previous period, the government took more active actions to stabilize the economy, formulating policies on housing supply and subsidy. It was at this period that homeownership gained political and legal support. But the practical considerations behind the policy were economic development rather than balancing the housing market. The essence of the housing policy was still indeterminate, and a preference for owning a house had begun to change housing supply and demand.

### **2.3 1990s-2000s: Non-interference with Housing Market**

In the 1990s-2000s, Taiwan faced further negative impacts on the housing market. Public housing accompanied by urban construction was planned as a solution to handle the rocketing housing prices since 1985. However, problems eventually emerged, such as an excessive supply of social housing and

high housing prices, leading to a suspension of providing public housing in 1999 (Lin W. I., 2006). During the same period, the government tried to increase incentives for private sectors and to expand housing subsidies, which became the trend in the following housing policy (Chen Y. L., 2013).

This period became a turning point in housing policy, since property industry grew rapidly, posing a threat to the housing market. In 1999, policy on public housing failed. By late 1990s, the government tried a pilot scheme of leasehold housing (based on superficies right) in Taipei City. About 416 dwellings were transacted, with usufruct for 50 years. Nevertheless, the purchasers advocated for the right of owning their houses by statement, appeal, or administrative petition. The government, on the contrary, compromised with those purchasers on transferring the ownership of the leasehold housing. Housing policy during this period still had no subject, but it let private sectors take control of the development of the housing market. The government's compromise indicated non-interference in the housing market. Homeownership rate in Taiwan thus surpassed 80% in 1990 due to the rapid growth in the property market.

## **2.4 2000s-Now: Form of Comprehensive Housing Policy**

After 2000, a wave of protests from social welfare organizations and local citizens arose. The problem of rising house prices remains, forcing the government to face the problem with new strategies. The Comprehensive Housing Policy was enacted in 2005. It was the first comprehensive and long-term housing policy, and an overall review of past housing policy, too. Its context included: improving the housing market, establishing a fair, efficient housing subsidy institution, and enhancing living quality. The concept of social housing was added to the statement for the first time. The importance of the Housing Act (draft) was also noted. But not until 2011 did the government enact the Housing Act, setting a clear goal for Taiwan's housing policy.

Huang (2013) used path dependence theory to analyse the context of affordable housing policy, and concluded that the context of affordable housing policy fall into a lock in situation, which means that the Public Housing Act has not changed its regulations from the basis in the process of revises over the years. While the Public Housing Act was replaced by the Housing Act in 2011, it showed a transition pattern of layering. In the lock in process of revises, institutions would be reinforcing.

This study agrees with the argument of Huang (2013). A lock in situation proves that while the Public Housing Act has dominated housing policy over the past four decades, homeownership has consistently affected housing supply and demand. Housing policy was based on the idea of homeownership. From providing public housing, stabilizing economic development, to the failure of public housing, the housing policy has continuously reacted passively. The government tried to promote leasehold housing, but failed to lead the housing market. Housing policy and social culture encourage the owning of houses, causing a high homeownership rate.

## **3. The Economic Context in Homeownership and Housing Market**

In the last section, it was noted that high homeownership in Taiwan derives from unbalanced policy, leading to a preference of housing consumption in the society. What role homeownership plays, then, is the main focus of this section.

Past studies often discuss homeownership from the perspective of tenure choice. Lee and Trost (1978) were the first ones to study a joint estimation of tenure choice and housing demand model; Hsueh and Chen (1999) also pointed out that homeownership is the sum of tenure choice of an individual household,

and it is feasible to analyze different factors affecting housing tenure of choice. From the perspective of tenure choice, the following are major factors to be discussed so as to analyze the role that homeownership plays.

### 3.1 House Price and Income

House price and income are two of the factors used to evaluate the ability to purchase a home. Usually the house price to income ratio has been regarded as an index of housing affordability. Figure 2 shows a rapid change of house price to income ratio, from 4.5 times in 2002 Q1 to 8.4 times in 2014 Q3. The rate has almost doubled the number in the ten years, especially in Taipei (15.2 times) and in New Taipei City (12.8 times), where transactions are most thriving. Since the homeownership rate has a slightly drop in 2009, does there exist a directly proportional house price to income ratio?



Figure 2. House Price to Income Ratio, 2002-2014

Source: Construction and Planning Agency, Ministry of the Interior, 2002-2014.

There are different aspects for house price and income available to evaluate the effect on tenure choice. Hsueh and Chen (1999) indicated that when housing prices increase, the user cost of owning a house relative to renting also increases. An individual household would lean towards renting rather than owning a house. On the one hand, income is the major factor in the category of household attributes (Hsueh and Chen, 1999; Shieh and Lin, 2000; Peng and Tsai, 2012). Higher income represents a better ability to pay off a mortgage. A permanent income in particular has better accuracy of evaluation than a current income (Goodman, 1988).

Nethertheless, the expectation of house price appreciation has a more positive impact on housing tenure choice than house price and income. Goodman (1988) and Hsueh and Chen (1999) both considered the expectation of house price appreciation increase regarding the expected utility of buying a house. An individual household would choose to own a house if housing becomes a favourable investment. Peng and Tsai (2012) had a further point of view on the argument stating that a continuous rise in homeownership derives from the excessive expectation of house price appreciation, especially in an area of high expectation of house price appreciation, where house price and income have a relatively low impact on homeownership. This may explain the fact that homeownership in Taipei City has stayed at

the current level since 2009 while housing prices keep increasing.

There is a similar consideration between the expectation of house price appreciation and the property ladder. Based on the investment potential and the desire of owning a house, first-time buyers get on the property ladder and then use the capital gained to move up as quickly as possible (Earley, 2004). However, there are other significant factors affecting the housing market, so as to make people have easier access to buying houses despite high housing prices.

### 3.2 Taxation of Homeowners

Taxation is also a major factor. Shieh and Lin (2000) indicated that increased property tax would make individual households tend to rent to reduce the cost instead of owning a house. Property tax has an even bigger effect than income.

In fact, many preferential treatments in housing demand were formulated to encourage homeownership. Take Income Tax Act for instance. The interest payable on a loan from a financial institution by a taxpayer, one's spouse and dependent for the purpose of a house for one's own use from one's consolidated income, with the deductible amount not to exceed NT\$ 300,000 per year, can be deducted from the taxpayer's consolidated income tax return. Another instance shows a subsidy on repurchases of a self-use residence. If the cost of the new building exceeds the original sales price, it may be deducted or refunded from the consolidated income tax payable. The provisions also are applicable to the taxpayer who buys first and sells later. In the current tax system, the higher the marginal tax rate, the more subsidies one can apply, and hence reduce the relative cost of owning, thereby encouraging owning a home (Shieh and Lin, 2000).

Other studies show that taxation has a more significant effect on homeownership rate. Bourassa and Peng (2011) explained that through simulation of change in tax policy, a percentage of increase in the property tax rate or a percentage of decrease in expectation of house price appreciation reduces the homeownership rate by about 12%. Besides, the low user cost contributes to high homeownership, indicating that the cost of owning may count for much in tenure choice.

As the subsidy on buying a home and taxation deduction has been in place for years, the low cost of owning may provide a suitable environment of encouraging homeownership. On the contrary, subsidies in renting market seldom get much attention, making this option less favourable for households.

### 3.3 Housing Vacancy Rate

In addition to the factors mentioned above, it is necessary to take vacancy into account, which represents practical demand and supply in the housing market. This section also sums up the peculiar phenomenon of high housing price, high vacancy rate and high homeownership rate, acquiring the current situation the housing market face.

Hua (2001a) discussed the relation between vacancy, homeownership rate, and housing price, finding that the positive impact on housing price homeownership rate exert is stronger than the negative one that vacancy exerts. Although the government could formulate a subsidy policy to stabilize housing prices, encouraging homeownership would also increase vacancy at the same time.

Besides that, the consumption of a second home in Taiwan could also be a possible factor increasing ownership rate and vacancy rate. The rate of owning two or more houses was around 16% in Taipei City and New Taipei City in total (Yang and Chang, 2001). Peng (2005) evaluated the difference between the equilibrium vacancy rate and the practical vacancy rate in Taipei City and New Taipei City, respectively.

It turned out that the difference was much closer than expected, and the equilibrium vacancies were both on the high side, indicating that a certain amount of second homes was not involved in the housing market. Thus, this would not affect housing prices even if the vacancy rate rises. Nevertheless, surveys on second homes in Taiwan have not been completely established compared with other countries, so the amount of second homes remains uncertain.

The current situation of the practical vacancy rate in the housing market has shown a contradictory phenomenon. The housing vacancy rate in Taiwan has keep rising in the recent 20 years, from 13.3% in 1990 to 19.3% in 2010 (Figure 3). This high vacancy rate shows a serious problem of vacant dwellings, compared to 13.5% in Japan, and 2.6% in the U. K. It seems that the past theoretical statements are in accord with the current situation.

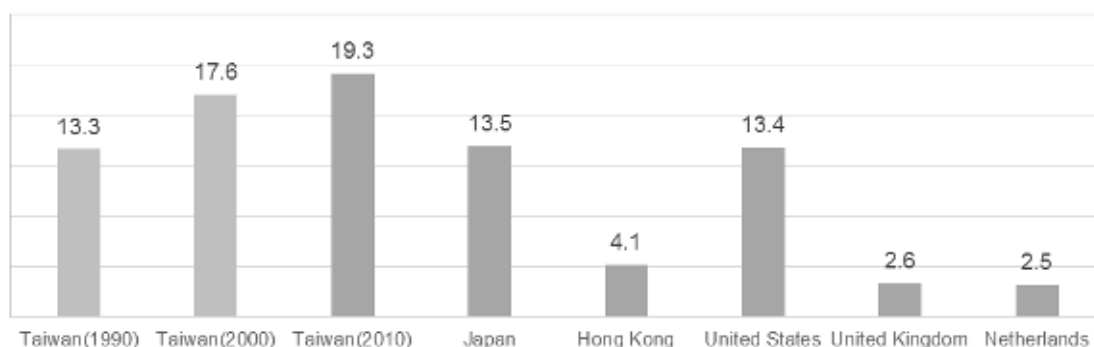


Figure 3. Housing Vacancy Rates for Selected Countries

Source: Population and Housing Census, Accounting and Statistics, Executive Yuan, R.O.C., 2010; Ministry of Internal Affairs and Communications Statistics Bureau, Japan, 2013; Department (R&VD), Hong Kong, 2013; U.S. Census Bureau, U.S., 2014; Department for Communities and Local Government, England, 2014; Central Agency for Statistics, Netherlands, 2014.

It is suggested that Taiwan belongs to the first quadrant of high homeownership rate and high vacancy (Figure 4), representing the condition of excessive housing supply and consumers being obsessed with buying houses (Hua, 2001b). From the analyses of house price to income ratio, taxation and vacancy, it is concluded that high homeownership has become an endogenous variable rather than the outcome of housing market operations. High homeownership also causes a negative impact on the housing market. Thus, the argument mentioned in the introduction is supported by the reviews of research.



Figure 4. Relationship between Homeownership and Vacancy

Source: Hua, 2001b.

## 4. Empirical Hypothesis and Methodology

### 4.1 Empirical Hypothesis

In this section, an empirical hypothesis is constructed based on the argument that high homeownership in Taiwan may not have a positive impact on the housing market. Figure 5 shows a brief diagram of a housing market cycle in Taiwan. All factors in the study mentioned above form a self-reinforcing cycle. The plus and minus signs represent a positive or negative relationship between two variables at both ends, respectively. Since there are even minus signs in the cycle, the cycle tends to reinforce itself through a feedback loop, and never tends towards equilibrium.

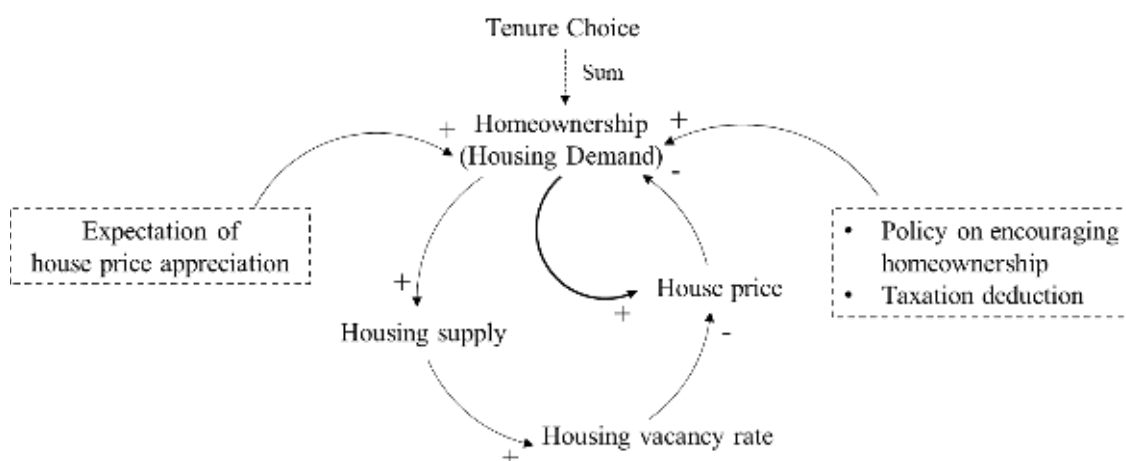


Figure 5. Diagram of Housing Market Cycle in Taiwan  
Source: Hua, 2001b; Modified by author.

It is assumed that individual households would follow these factors when making a tenure choice decision. Under the influence of high expectation of house price appreciation and policy on encouraging homeownership, most people choose to become homeowners. But after the Housing Act was enacted in 2011, more social housing projects will change the housing supply and housing prices. According to Social Housing Advocacy Consortium (2015) statistics, the total amounts of social housing stock in Taiwan are 7,312 dwellings, while 6,641 dwellings are in Taipei City. New Taipei City and Kaohsiung City, the largest and second-largest cities in Taiwan, also take part in the construction of social housing. Besides, appropriate housing sells at a price that is lower than the market price; the rent of social housing is 70% of the market price, indirectly restraining the rise of housing prices.

Although the concept of social housing is at a preliminary stage, it is the key construction project of housing for other cities and counties with a legal basis. The quality of the renting market may be improved, since housing policy directly affects tenure choice from the supply aspect and puts emphasis on homeownership. How would the cycle vary if the condition of housing supply changed? Would homeownership tend to decline due to the change? Most important of all, would housing demand meet housing supply in the long term?

Hence, the empirical hypothesis of this study was designed to evaluate the change in homeownership when taking social housing into account. The housing market cycle would function in a slightly different way. More changes in percentage of renting derived from tenure choice may lead to a decline in homeownership, especially for those areas having more amounts of social housing.

## 4.2 Methodology

Because homeownership is based on tenure choice, past studies had wide discussions on how individual households act when making a tenure choice decision, apart from the aspect of theoretical basis of behavior, and apart from the econometric perspective, describing possible factors which may affect tenure choice (Lien, 2009). This study used a probit model as the tool for empirical analysis. This can be seen in the following formula:

$$P(\text{OWN} = 1) = F(a_0 + \beta_1 X_1 + \dots + \beta_n X_n)$$

OWN=1 refers to the condition that household has one house of their own. The formula of  $P(\text{OWN}=1 | f(X))$  indicates the conditional probability of homeownership. The individual possibility of owning a home (OWN\*) can not be observed in practice (Hsueh and Chen, 1999), so it can be described as OWN=1 if  $\text{OWN}^* > 0$ ; otherwise, OWN=0. F refers to a cumulative distribution function which complies with normal distribution, while  $a_0$  is a constant term, and  $X_j$  is for explanatory variables.

The empirical model was expected to acquire the impact of those variables on homeownership, and to find the implicit housing demand. The current evaluation of housing demand only uses households in Taiwan as the amount of demand. It is suggested that the difference between housing demand and supply can be observed when a comparison of current evaluation and a housing demand model from homeownership perspective is made, and the empirically analyzed results can also provide a policy feedback.

## 5. Summary

This study re-examined the correlation between housing demand and homeownership, and discussed whether there is a phenomenon that shows higher homeownership provides better social or external benefits in Taiwan. From the literature review of housing policy, we concluded that there is a fundamental stand for advocating homeownership in most policy making. Thus, housing policies during four major developing periods in Taiwan only reinforce the preference of owner-occupied housing, and cause the insufficiency of renting market mechanism.

As for the role that homeownership plays in the housing market, we indicated that homeownership, housing price, and vacancy form a self-reinforcing cycle. High homeownership, which correspond closely to the anticipation of high house price increment and housing policy, brings along high housing prices and high vacancy rates at the same time, leading a deteriorated housing market. Thus, we concluded that high homeownership may be one of the factors that cause the unbalance in the housing market. While social housing is an ongoing policy, it may have a chance to get involved in the cycle, and it may moderate the high homeownership impact from the supply aspect. Hence, there is a need for understanding the practical housing demand on the basis of tenure choice to adjust related housing policy. Further study would use a tenure choice model to estimate the change of the factors to housing demand so as to evaluate the impact on homeownership considering social housing supply, and provide evidence for the theoretical argument.

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