PART ONE:
The Price of Our Public Housing Programme

Executive Summary

1. The Contemporary Picture

In Hong Kong today, household dwellings are roughly evenly divided between the private and public sector. At the same time, Hong Kong also has a massive public sector housing programmes on a scale that is unprecedented in free-market economies.

Among the public housing sector, the government provides a substantial number of "subsidised sales flats" for eligible households to purchase. In essence, the prevailing mechanism of subsidised sales flats is as follows:

(i) Assume a subsidised sales unit has an estimated market value of $1 million (HK$, same hereafter unless otherwise specified). It is first sold at a "discount" of, say, 30% against the market value (i.e. $700,000) to an eligible household satisfying the relevant means test;

(ii) The government also acts as the guarantor for the said property, allowing the household to obtain a mortgage up to 95% of the discounted price (i.e. $665,000);

(iii) The unpaid 30% of the house's market value (i.e. $300,000), is commonly termed the "unpaid (land) premium", and is payable to the government when the unit is sold in the open market in the future upon satisfying other requirements; and

(iv) The value of this unpaid premium is determined with reference to the market value not at the date of occupation of unit, but at the time when repayment is to be made. For example, if home prices double during this period (i.e. from $1 million to $2 million), the amount payable by the household before the unit can participate in the open market will also double (i.e. from $300,000 to $600,000).

This has made the term "homeownership" spurious in the public housing sector as very few "owners" of the "Homeownership Scheme" (HOS) (22%) and "Tenant Purchase Scheme" (TPS) (1%) can successfully settle the unpaid land premium, rendering the market for such units effectively non-existent and non-functional. This has grave socioeconomic consequences far beyond housing issues.

Additionally, the first generation of HOS units were built in the 1980s. Under the current mechanism, by the time redevelopment of these units is called for, the amount of unpaid premium will probably reach an astronomical level. Given that after settlement of unpaid premium to the government, the owners would be highly unlikely to be able to afford another unit in the market, they would therefore be reluctant to participate in private redevelopment. The city will then be left with numerous run-down HOS and TPS estates with shared ownership between the quasi homeowners and the government.

Furthermore, the present layout of HOS and TPS units is unfair. Unlike private owners who pays 100% of the maintenance fee and can subsequently enjoy 100% of the appreciation in value associated with the units, the owners of HOS and TPS units who are paying the full amount of maintenance fee will only be able to enjoy the capital appreciation minus the unpaid land premium. In the previous example, the owner can only enjoy 70% of any appreciation in captial values.

In terms of public finance, the public housing system is unsustainable. The average rent per public rental housing (PRH) unit is about $1,700 per month. This figure falls significantly short of the market value, which was put at $11,000 per month for a 360-sf private housing unit. On top of this, the government is subsidising on average $158 per flat per month on maintenance and other operational services.

Assuming a discount rate of 4% and assuming that each PRH unit has an estimated useful life of 50 years, the government is actually, in present value terms, subsidising around $2.4 million for each unit. Likewise, to meet the 10-year public housing supply target, the government has set aside its investment returns in 2015 and 2016 into the Housing Reserve which now stands at $74 billion. This is a tremendous fiscal burden.

The current public housing policy has produced the gulf between the 'haves' and 'have-nots', which has been widening since the mid-2000s. Disturbingly, this is connected to an array of malign issues including (a) an unequal and inequitable allocation of public housing; (b) the increase in rate of divorce and family breakdown; (c) low intergenerational mobility and poverty; and (d) social injustices.

2. The Inequality and Inequity of Housing Units

The small size of PRH units relative to other types of housing is a historical product of Hong Kong's resettlement housing programme introduced in the 1950s. And given the large difference in the median size of the housing units between the private and public housing sectors, an efficient or optimal housing arrangement would require that there be very different income levels between the occupants of these sectors.

In reality, however, the PRH programme fails to achieve equity in housing consumption. In 1981, the incomes of the wealthy half of the public tenants were equal to the wealthy half of the private tenants. By 2011, there

was some improvement, but the problem of overlap in the distribution of public and private tenants remained substantial.

Distribution of working-aged households (household heads aged 20 – 65) by housing type and by income quartiles

(%)	Public tenants		Private tenants		Public homeowners		Private homeowners	
	1981	2011	1981	2011	1981	2011	1981	2011
Bottom quartile	23%	48%	31%	21%	4%	17%	20%	13%
2nd quartile	28%	32%	26%	21%	13%	30%	20%	20%
3nd quartile	29%	17%	22%	24%	36%	35%	24%	27%
Top quartile	20%	3%	21%	35%	47%	17%	36%	39%
Bottom 2 quartiles	51%	80%	57%	42%	17%	47%	40%	33%
Top 2 quartiles	49%	20%	43%	58%	83%	53%	60%	67%

Source: Census and Statistics Department.

3. Divorce and Family Breakdown

The crude divorce rate in Hong Kong was 3.1 per 1,000 people in 2013, nearly three times higher than that in 1991. This places Hong Kong in the top ten in the world in divorce. We believe that implicit in the PRH allocation criteria is an in-built incentive that provides encouragement for unhappy couples or low-income households to initiate divorce and remarry across the border. A low-income divorced parent could apply for readmission to the PRH programme, often with preferential consideration (compared with being a singleton), if he or she had dependent children or remarried, since the current PRH allocation criteria favour married couples but do not discriminate between first marriages and remarriages.

This perverse incentive further tilts the balance in favour of divorce among low-income families and generates a penalty on children who inevitably suffer from family breakdown. The growing number of divorced women living in PRH units implies a rising number of children growing up in broken families in PRH estates. This is not conducive to upward social mobility but sets the stage for the production of a new underclass that perpetuates intergenerational inequality and low social mobility.

4. Intergenerational Mobility and Poverty

Divorced men and women are heavily concentrated in PRH. It follows that the PRH estates have become a conglomeration of single parent households that will have an adversarial effect on a sizeable number of children. Their development is stunted, causing both income inequality and poverty.

Hong Kong's public housing estates are transforming into areas of concentrated poverty with more children living with a single parent. These children reside in poor neighbourhoods which might lack good role models

to learn from and to emulate. This might demotivate them, perpetuate dynamic poverty and affect their future likelihood of moving up the social ladder.

This Report believes that extending homeownership is essential to family investment in both human and social capital. Indeed, many studies have shown families who are homeowners are more likely to invest in childhood development and neighbourhood stability.

5. Public Housing Policy and Social Justice

The current public housing policy is unjust because the society loses the value inherent in the public sector housing unit, the physical premises itself and the land that it occupies. The evaporation of resources benefits no one.

First, the taxpayer hardly ever collects the unpaid land premium because very few households ever pay it. Second, the subsidy provided by taxpayers to the household is the difference between the market value of the unit and the price the household pays for its use as shelter. Over time, the amount of the subsidy will increase as land values increase. It is unjust that the taxpayer pays for the asset value of the unit, but the household receives only the shelter value of the unit.

6. The Subsidised Homeownership Scheme (SHS)

A faster, less expensive and non-wasteful solution to address these malign issues will be the implementation of the SHS, granting eligible families the option to either purchase, rent or the choice to "rent first, purchase later" new public housing units in the future. Also, under the SHS, the unpaid land premium will be considered as a "loan", with its value fixed at the date of occupation, instead of effectively an "equity" under the existing system that fluctuates according to changes in market value of the unit.

This would render settlement of the unpaid land premium much easier, and a market for these units will quickly emerge. There would be an incentive for trading to take place and the re-matching of tenants' needs and housing units would come into effect and the problem of inequity could be rectified.

Additionally, bona fide homeownership in public housing units would incentivise families to stay together and discourage family breakdown. This can therefore act as a barrier against the costs of a broken family among the children of the divorcees and prevent the build-up of bad neighbourhoods that fosters poverty and lowers social mobility.

Since social mobility is closely associated with homeownership, the SHS would relieve Hong Kong of the bourgeoning problems of income

inequality and poverty. Not only can families stay together and children are benefited, the elderly population can also tap into the property asset as a form of retirement protection. With a home, a reverse mortgage can allow the elderly population to use the home equity for their retirement.

Furthermore, if we allow a market to exist, then less well-off households gain a share of the value of the land that would otherwise be lost, and in so doing they put the land resources to better use and raise the incomes of everyone. It is a win-win scenario. The outcome will be socially just. The SHS would allow for a more just society where resources are yielded for all, allowing people to have greater freedom of choice, and build a better community.

7. Concerns

A major concern about the privatisation of PRH and HOS units is that it may lead to a flood of new housing units into the market and trigger property prices to go down. However, the experience of the privatisation of social housing in the UK and our empirical findings suggest that granting more households the full property rights to their housing units does not necessarily lead to a drop in home prices.

Another major reservation to the SHS is the perception of unfairness, that public tenants will receive a 'double benefit' of a low rent and a discounted price from the government. However, under the SHS, the subsidised price will be repaid in full in the future. In effect, the government will merely be providing the financing which may be inaccessible for lower-income families, and the SHS would recover the full market price of the unit as the buyers pay the downpayment and service the mortgage loan, and upon their settling of unpaid premium, which would no longer be fluctuating with market value under the SHS.

8. Conclusion

Due to globalisation and technological advancement, wealth and income inequality is a worldwide phenomenon and is not constrained to Hong Kong alone. Governments from all over the world have sought to tackle this problem with little headway. Fortunately, the future of Hong Kong is more optimistic than others. Due to the fact that nearly half of the population of Hong Kong resides in public housing, this provides a golden opportunity to mitigate the unequal distribution of capital by providing homeownership and therefore an asset, possibly the most valuable form of capital, for the relatively lower-class citizens living in public housing.

Therefore, the Report is optimistic that the SHS will bring about positive externalities for the society of Hong Kong as a whole. An increased homeownership rate would narrow the disparity in asset distribution and hence the gap between the "haves" and "have-nots". The pursuit of a more equal and unified Hong Kong could be acheived.

1. Introduction

The shortage of land and housing is a perennial issue among the people of Hong Kong. Hence, as its first area of focus, Our Hong Kong Foundation (OHKF) published a research Report titled "Maximising Land Use to Boost Development; Optimising Housing Resources to Benefit All" in November 2015.

The said Report proposed to extend homeownership to the underprivileged by advocating for the implementation of the "Subsidised Homeownership Scheme" (SHS). The Report saw the SHS as an effective and viable policy option that could not only satisfy the demand for property ownership, but also to release valuable land resources. This in turn can steer the community of Hong Kong towards a direction of social harmony and prosperity.

In this second edition, the socioeconomic ramifications of the current housing policy are laid out and analysed. The objective of this research is to provide a clear and concise picture of how the public housing programme is detrimentally affecting the livelihood of the people residing within it. This further sheds light on the immense cost of our current housing policy on the society of Hong Kong and offers recommendations on a rethinking of current policies.

The Report is organised into seven main chapters: First, Background: The Contemporary Picture sets the scene by providing background information to the housing situation today and to introduce the urgency for the need to implement the SHS.

The following four chapters: The Inequality and Inequity of Housing Units; Divorce and Family Breakdown; Intergenerational Immobility and Poverty; and Public Housing Policy and Social Justice serve as an in-depth analysis on the price of our misguided housing policies with each chapter focusing on an overarching theme.

The subsequent benefits of the SHS are then discussed in The Subsidised Homeownership Scheme.

Next, Concerns addresses the salient issues of property prices and the notion of unfairness that critiques of the SHS have suggested.

Lastly, Conclusion summarises the key points and highlights the imperative of the SHS as a major policy alternative to current policies.

2.Background: The Contemporary Picture

2.1 Private and Public Household Dwellings

In Hong Kong today, household dwellings are roughly evenly divided between the private and public sector. **Table 1** shows that by the end of 2015, private sector owners and renters constitute about 53% of total domestic households, while 47% of households reside in various forms of government subsidised housing. In particular, 16% live in subsidised sales units in which the "Home Ownership Scheme" (HOS) and the "Tenant Purchase Scheme" (TPS) makes up the majority, and 31% live in Public Rental Housing (PRH) Units.

Table 1. Domestic households by type of housing, 2015

Type of housing	Number of domestic households	Share of domestic households
Public Rental Housing	769,100	31.0%
Subsidised Sales Flats*	384,500	15.5%
Private Permanent Housing	1,318,200	53.1%
Temporary Housing	10,900	0.4%
Total	2,482,700	100%

Note : (*) Subsidised sales flats that can be traded in open market are excluded.
Source: Census and Statistics Department.

Hong Kong has a large public housing sector even by international standards. **Table 2** shows that among other advanced economies, the percentages of domestic households in the population living in public sector housing pale in comparison with Hong Kong.

Table 2. Percentage of domestic households living in public rental housing in selected economies

Economies	Public Rental Housing
Hong Kong	31.0% (2015)
Japan	5.4% (2013)
Macau	3.5% (2011)
Singapore	6.4% (2015)
South Korea	5.0% (2012)
Sweden	20% (2013)
United Kingdom	17.3% (2015)
United States of Amercia	4.0% (2012)

Note : Latest available data are presented. The figures in parentheses represent the year to which the data pertain.

Sources: Official Statistics of Japan, Statistics and Census Service Macau, Department of Statistics Singapore, Kim (2014), Statistics Sweden, GOV.UK, and National Low Income Housing Coalition.

2.2 The Problem with Property Ownership

As **Table 1 and 2** show, Hong Kong has a massive public sector housing programme on a scale that is unprecedented in free-market economies. It is undeniable that the government of Hong Kong is the single largest landlord, developer, and operator of housing within the territory. While Hong Kong is often compared with Singapore in terms of housing policy, the two housing programmes are critically different because of their different policies on homeownership and tenancy rights.

Singapore has allowed for the establishment of an active market in public sector housing for rental, as well as for sales and purchases. The units are rented and sold to eligible households at subsidised prices. After five years from the date of effective purchase, owned units can be sold on the open market to eligible permanent residents of Singapore. In addition, the owner of the units can even sublet the unit, in whole or in part, on the open market. As a consequence, there has been no impediment to the emergence of a market for public sector housing both for renters and owners.

In Hong Kong however, restrictions have rendered the market for such units effectively non-existent and non-functional, with grave socioeconomic consequences far beyond housing issues. This is because unlike Singapore, the so-called "subsidised" sales flats in Hong Kong is not, in fact, subsidised. The prevailing mechanism of subsidised sales flats is as follows:

(i) Assume a subsidised sales unit has an estimated market value of $1 million (HK$, same hereafter unless otherwise specified). It is first sold at a "discount" of, say, 30% against the market value (i.e. $700,000) to an eligible household satisfying the relevant means test;

(ii) The government also acts as the guarantor for the said property, allowing the household to obtain a mortgage up to 95% of the discounted price (i.e. $665,000);

(iii) The unpaid 30% of the house's market value (i.e. $300,000), is commonly termed the "unpaid (land) premium", and is payable to the government when the unit is sold in the open market in the future upon satisfying other requirements; and

(iv) The value of this unpaid premium is determined with reference to the market value not at the date of occupation of unit, but at the time when repayment is to be made. For example, if home prices double

during this period (i.e. from $1 million to $2 million), the amount payable by the household before the unit can participate in the open market will also double (i.e. from $300,000 to $600,000).

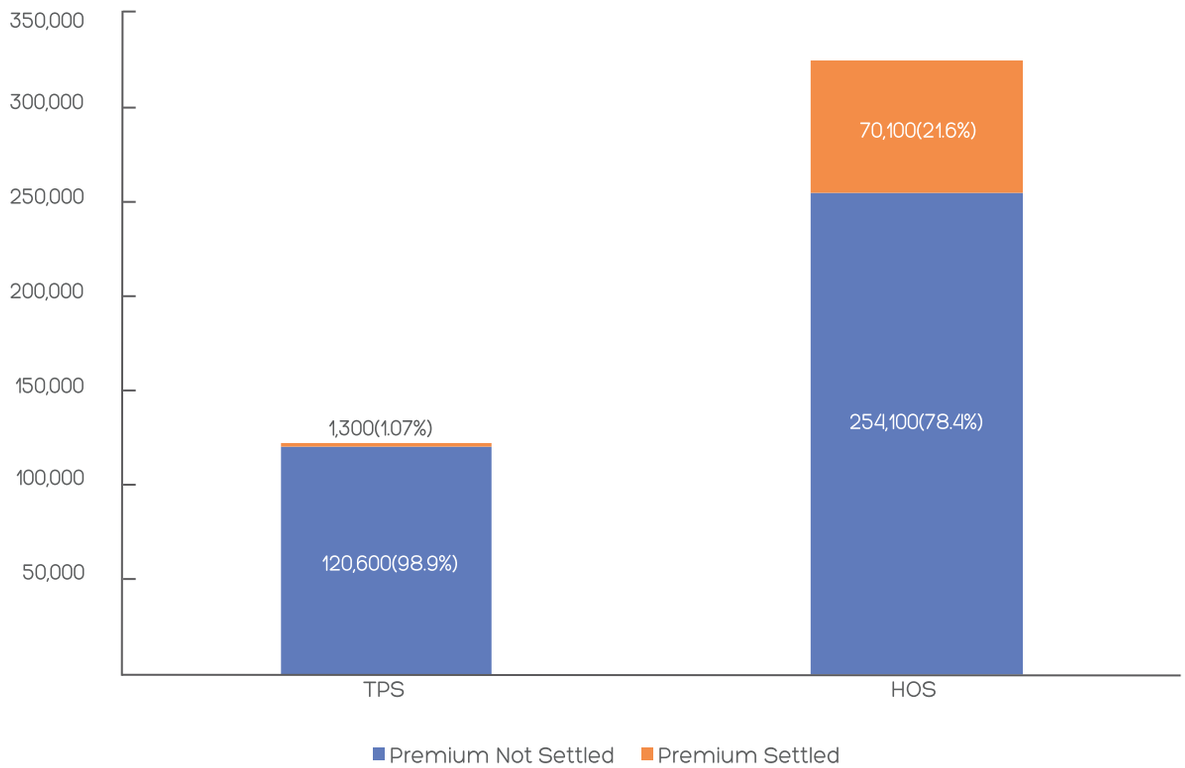
In the example above, the word 'discount' should not be interpreted at the face value. This is because unlike, for example, discounts in brick-and-mortar businesses where a discount on the price of a product does not have to be repaid in the future, the unpaid land premium has to be repaid in full upon resales of the unit in the open market. Not only that, instead of being fixed at the date of occupation, the said repayment is made according to the market value as the example shown above. In other words, this amount due to the government is not just a "loan", but effectively an "equity" in the property. The only subsidy under the current mechanism, if any, is the role the government plays in terms of financing, where it currently acts as a guarantor of the said property and the household in question may obtain a mortgage up to 95% of the property's value.

The direct consequence of the above mechanism is that it has rendered the term 'homeownership' in the public housing programme in Hong Kong spurious. Historically, the land value of the land premium has grown at a faster rate than inflation or household income, making it very difficult for families living in subsidised sales flats to save up sufficient capital to settle the unpaid premium.

Take HOS as an example. As of 2012, only 22% of some 320,000 HOS units have their premiums settled, making their owners bona fide homeowners. The remaining 78% are homeowners without the same property rights commonly prescribed to private ownership. This is because the requirement to repay the land premium poses a major hindrance to bona fide ownership of public housing units and restricts them from trading the asset in the open market without first settling the hefty premium. Hence, the majority of purchasers of HOS units are in fact quasi homeowners.

The situation under the TPS is even direr. Only 1% of some 120,000 units have their premiums settled (See **Figure 1**). This is possibly due to the generally steeper discounts offered to TPS households, and consequentially, leads to an even higher unpaid premium that is even more difficult to pay down.

Figure 1. Premium settled in HOS and TPS units



Note : All data pertain to 2012.
Sources: Legislative Council, and Census and Statistics Department.

To provide another illustrative example, **Table 3** displays the average sales price of two of the earliest HOS units: Sui Wo Court Phase I in Sha Tin, completed in 1980, and Chun Man Court in Ho Man Tin, completed in 1981. The original sales price had a 30%-discount over the estimated market value. Therefore, the true market price per square feet (psf) for these two developments would have been about $320 and $317 at the time of their completion. In 2011, the open market prices of transacted units in these two developments were $4,066 and $5,685 psf. This represents an appreciation of 12.7 times and 17.9 times over a 30-year period. It outpaced by a wide margin the increase in consumer prices of four times over the same period. Under the current mechansim, these HOS owners would have been highly unlikely to be able to sell the property on the open market because, after returning the land premium to the government, he or she may not be able to afford the purchase of another unit on the market.

Table 3. Original sales price and 2011 market price for HOS units (psf)

	Year	Sui Wo Court Phase 1, Sha Tin	Chun Man Court, HO Man Tin
Average original sales price	1980/81	$224	$222
After adding back a 30% discount to the original sales price	1980/81	$320	$317
Open market transaction price	2011	$4,066	$5,685
Value Appreciation		12.7 times	17.9 times
Value appreciation p.a. in percent		8.85%	10.10%

Source: Wong (2015a).

However, this was not actually the case in the early stages of the public housing programme. The market-adjusted land premium did not exist and early occupiers of HOS units in the two said HOS estates, were in essence, bona fide homeowners. It was only after 1982 that HOS units were subjected to restrictions stipulating that owners must first pay the land premium before the unit could be sold in the open market.

Linked to the fluctuations of property prices in the open market, owners of HOS units are not free to sell the units they ostensibly "own" unless they have repaid the land premium to the government. For the vast majority of HOS occupants, this is simply not affordable. The household in question becomes effectively a permanent occupant of the unit. Having paid for the development costs of the structure, the occupant household can remain in the unit for "free" but, because it cannot afford to pay the land premium, it is restricted to these premises. Even when the unit is no longer suitable due to the changing aspirations of household members over their life cycle, there is no choice but to stay there.

In fact, to the knowledge of the research team, no other developed economies with sales of public housing have an alienation restriction that requires owners to pay a market-adjusted land premium before resales on the open market (see **Table 4**).

Table 4. Resale restrictions of public housing flats in selected economies

Economies	Resale restrictions
Australia	Minimum occupation period
Macau	Inalienable period of occupation
Singapore	Minimum Occupation Period, Ethnic Integration Policy, Singapore Permanent Resident Quota*
United Kingdom	Repayment of discounts[1]

Note : (*) The Ethnic Integration Policy and Singapore Permanent Resident Quota are a set of proportion for the block / neighbourhood to ensure a balanced mix of ethnic groups and integration into the Singapore community.
Source: Government of South Australia, Housing Bureau (Macau), Housing and Development Board (Singapore), and GOV.UK.

There are two other problems associated with the public housing programme in Hong Kong especially regarding to the redevelopment of older HOS and TPS units. The situation is immensely convoluted with the current public housing mechanism. By the time redevelopment is called for, the amount of unsettled premium will probably reach an astronomical level. These owners would have very little incentive to sell their units for redevelopment since after settling the premium with the government, they would be highly unlike to be able to afford another unit in the private market. The city will then be left with numerous run-down HOS and TPS estates with shared ownership between the quasi homeowners and the government.

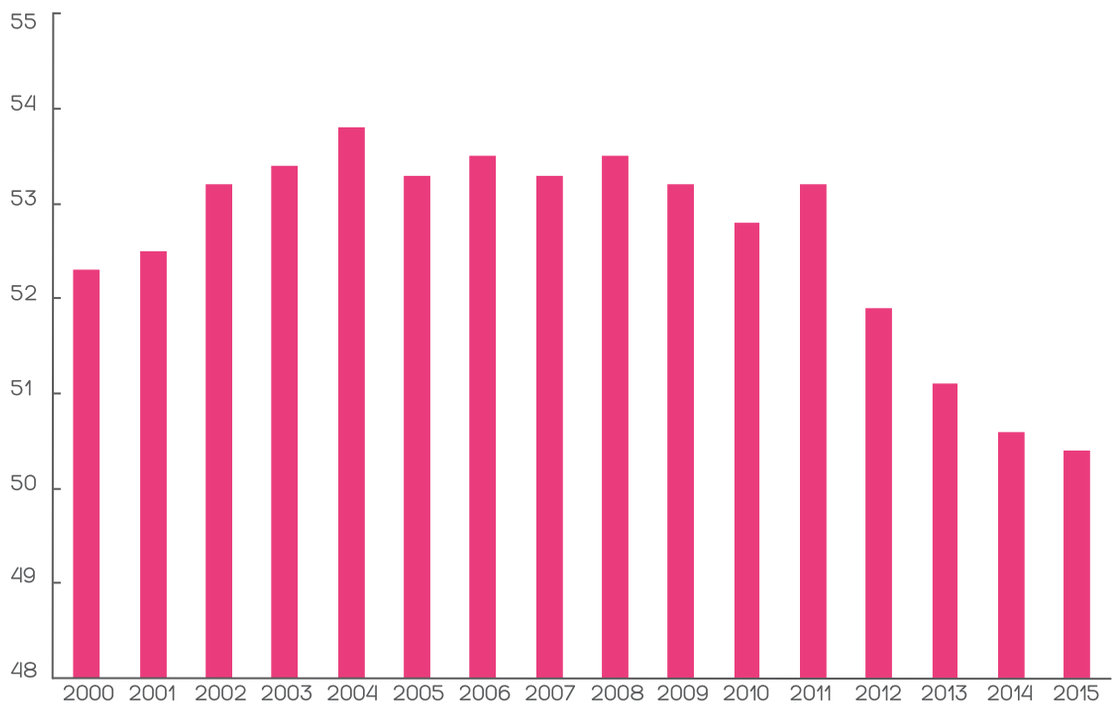
1. Amount of discount to be repaid will be a percentage of the resale value of the property. If the household sells within the first year of purchase, the whole discount will have to be repaid. 80% must be repaid if the household sells in the second year, 60% in the third year, 40% in the fourth year and 20% in the fifth year. After five years, the household can sell without repaying any discount.

Secondly, the present layout of HOS and TPS units is unfair. Unlike private owners who pay 100% of the maintenance fee and can subsequently enjoy 100% of the appreciation in value associated with the units, the owners of HOS and TPS units who are paying the full amount of maintenance fee will only be able to enjoy the capital appreciation minus the unpaid land premium. Thus, in the case illustrated above, owners of HOS units will only be able to enjoy 70% of the capital appreciation associated with any improvements of the properties.

2.3 The 'Haves' and the 'Have-nots'

The issue of bona fide vs quasi homeownership is not the only concern with property ownership in Hong Kong.

Figure 2. Trend in homeownership rate (%), 2000-2015



Source: Census and Statistics Department.

As **Figure 2** shows, similar to the divide between the public and private sector of household dwellings, the distribution of households by tenure of accommodation, i.e. whether they are owners or renters of the properties, is also approximately equal. While homeownership in Hong Kong constitutes a slight majority in the population, the trend of homeownership rate has been decreasing since the mid-2000s from its peak in 2004. This is most probably due to declining affordability of homeownership because of high property prices.

This has produced the gulf between the 'haves' and 'have-nots', as well as the 'quasi-homeowners' and 'bona fide homeowners', which has been widening since the mid-2000s. Disturbingly, this is connected to an array of malign issues, including and not limited to (a) an unequal and inequitable allocation of public housing; (b) the increase in rate of divorce and family breakdown; (c) low intergenerational mobility and poverty; and (d) social injustices. The Report will explore in detail each of these aspects in

the ensuing chapters.

2.4 Unsustainability

Furthermore, the public housing system is unsustainable. The average rent per PRH unit is about $1,700 per month. This figure falls significantly short of the market value, which was put at $14,000 per month for an average 500-sf private housing unit. On top of this, the government is subsidising on average $158 per flat per month on maintenance and other operational services.

Assuming a discount rate of 4% and assuming that each PRH unit has an estimated useful life of 50 years, the government is actually, in present value terms, subsidising around $3.2 million for each unit.

Likewise, to meet the 10-year public housing supply target, the government has set aside its investment returns in 2015 and 2016 into the Housing Reserve which now stands at $74 billion. This is a tremendous fiscal burden the government has to carry on its shoulders, and reveals that the current public housing regime imposes financial pressures for the government to deliver year after year.

2.5 Need for Change

Housing is not merely shelter. For most households, homeownership is the most important form of their savings and therefore a means of wealth accumulation and upward social mobility. This is especially true in Hong Kong, where land values are high and rising. For some households it can be a form of ready financing if the property can be re-mortgaged, especially for those who otherwise would have poor access to banks or financial help form relatives and friends. It could play a pivotal role as a source of social security for old age. Its effects span more than a single generation, because it can also be used as a bequest.

At the aggregate macroeconomic level, homeownership is an important form of fixed investment and directly affects consumption, savings, and aggregate output over the business cycle. It is also affected by these cycles. Most important of all, land and housing are valuable scarce resources, and whether they are efficiently deployed has important consequences for the growth and prosperity of a city and nation.

Nonetheless, amid the backdrop of such a lugubrious picture, the vital question to consider is: Given the current predicament, how does a housing strategy fit into the socioeconomic and political wellbeing of Hong Kong in the future?

To provide an answer to the question posed, the Report provides a unique perspective through which the need for the implementation of the SHS can be viewed. Furthermore, it is not simply a matter of satisfying demand for homeownership, but rather for the betterment of the economy and the society as a whole in light of the high costs and inefficiency of the existing system. The Report hence provides an additional layer of

justification to consider the SHS as an effective panacea for Hong Kong's social, political, and economic ills.

It would be sensible to appreciate that by reforming the public housing programme along the lines prescribed by the SHS, a city of homeowners will produce positive externalities for our society. Furthermore, OHKF believes that in the long run, the privatisation of public housing covering not only future supply of public housing, but also existing public housing units should be explored. This would maximise the benefits to our society.

(i) Rent-and-buy units are available for new public housing units with the option of "rent first and buy later". The government will act as the guarantor of the property so that the buyer could obtain a 90% to 95% mortgage to help low-income families to buy units sold under the SHS.

(ii) The unpaid premium will be considered effectively a "loan" from the government to the purchaser and the amount concerned will be fixed at the date of occupation. While the exact amount could be subject to a few possible mechanisms of determination depending on public discussion, unpaid premium under the SHS will no longer be linked to the fluctuating market value, rendering the settlement of the amount easier.

In brief the mechanism of the SHS for new public housing tenants is as follow:[2]

Having provided an overview of the public housing setting in Hong Kong, the following four chapters will focus on the consequences arising from the public housing programme. Each of the chapters will analyse an overarching theme: Inequity, Divorce, Poverty, and Injustice.

2 For a more detailed description of the SHS, please refer to Part One of our first Report on Land and Housing, "Maximising Land Use to Boost Development; Optimising Housing Resources to Benefit All".

3. The Inequality and Inequity of Housing Units

3.1 Equal Yet Unequal

A well-known result from the economics of housing demand is that households with higher incomes prefer or demand bigger homes (cf. Richardson, 2013; Becker, 2013; Arnott & McMillen, 2008), and the size of accommodation is expected to be positively correlated with income.

Figures for the median size of the various housing units are tabulated in **Table 5**. There is evidence that the size of PRH units have grown over time relative to private housing units, but the average size was still about 60% of private housing for the period from 1980 to 2015.

Table 5. Median size of existing stock of housing units by type, (in square meters)

Year	Existing Stock of PRH Units	Existing Stock of HOS Units	Existing Stock of private housing
1980	23.1	51.3	53.9
1985	24.5	51.8	46.1
1990	28.3	52.4	47.1
1995	29.6	53.7	48.0
2000	31.9	54.0	49.5
2005	34.0	56.0	50.4
2010	33.8	55.9	51.1
2015	33.5	56.0	51.5*

Note : (*) Data pertain to 2014.
Sources: Our Hong Kong Foundation, Housing Authority, and Rating and Valuation Department.

The small size of PRH units relative to other types of housing is a historical product of Hong Kong's resettlement housing programme introduced in the 1950s.[3] It initially targeted a limited number of squatters but quickly mushroomed into a massive PRH programme. Like all public sector programmes, it provided a uniform standardised product administered by one set of rules and regulations with limited flexibility, an approach intended to avoid criticisms of unfairness and corruption.

3 See **Appendix I** for a more detailed narrative on the history of the resettlement housing programme.

One important standard was the size of the accommodation. The initial standard was set with reference to the cramped conditions of the old private tenements. Nonetheless, once the standard was laid down, it became formally institutionalised and efforts to change the standard became a politically divisive issue, subject to criticisms and reservations across the board. Numerous protracted bureaucratic meetings were required to achieve consensus, thus leading to prolonged indecision.

As a result, the standard of accommodation in the PRH sector changed very slowly and lagged behind developments in the private market. This gap between the private and public sectors has not narrowed significantly since.

The government's public housing policy is therefore the direct reason why an unreasonably large proportion of housing units in Hong Kong are too small. Any public housing programme is unavoidably committed to building uniform-sized units for all. Yet when these units are small, then a considerable number of them will be occupied by better-off households who aspire to live in better and larger units, and the public sector provision has fallen short of this aspirations for the past 60 years.

3.2 The Inequity of Our Housing Policy

Given the large difference in the median size of the housing units between the private and public housing sectors, an efficient or optimal housing arrangement would require that there be very different income levels between the occupants of these sectors.

Table 6 presents figures on these income distributions in 1981 and 2011. All households are divided into four quartiles according to their monthly income, from the top 25% to the bottom 25%. They are then assigned into four categories according to their housing type: public tenants, private tenants, public homeowners, and private homeowners to each of the four quartiles and determine what percentages of their respective categories are in each of these household income quartiles.

Table 6. Distribution of working-aged households (household heads aged 20 – 65) by housing type and by income quartiles

(%)	Public tenants		Private tenants		Public homeowners		Private homeowners	
	1981	2011	1981	2011	1981	2011	1981	2011
Bottom quartile	23%	48%	31%	21%	4%	17%	20%	13%
2nd quartile	28%	32%	26%	21%	13%	30%	20%	20%
3rd quartile	29%	17%	22%	24%	36%	35%	24%	27%
Top quartile	20%	3%	21%	35%	47%	17%	36%	39%
Bottom 2 quartiles	51%	80%	57%	42%	17%	47%	40%	33%
Top 2 quartiles	49%	20%	43%	58%	83%	53%	60%	67%

Source: Census and Statistics Department.

The results are, quite simply, alarming. In theory, if those living in pulbic housing are indeed the poorest in the society, their combined share

in the bottom two income quartiles should be extremely high, while that for private tenants would be very low. Yet, among working-aged households, in 1981, 51% of the public tenants are in the bottom two income quartiles. For private tenants the proportion is 57%. There is an overlap of the two distributions. The overlap is also considerable even if we compare the percentage of households quartile by quartile from bottom to top.

The PRH programme clearly fails to achieve equity in housing consumption. In 1981, the incomes of the wealthy half of the public tenants were equal to the wealthy half of the private tenants. The bulk of the wealthy half of the public tenants was living in housing units that were about 60% of the median size of private housing units. Evidently, these public tenants were living in housing units that were too small relative to what they could afford in the private market. Those that stayed accepted their housing conditions only because of the exceptionally cheap rent.

By 2011, there was some improvement, but the problem of overlap in the distribution of public and private tenants remained substantial. Some 17% of public homeowners were in the top quartile, against 39% of private homeowners. In addition, 80% of PRH tenants were in the bottom two income quartiles, but so were 42% of private rental tenants. The proportion of lower-income households in public housing has grown simply because more of them have been admitted into the PRH programme than previously.

The failure to target housing benefits to the poorest in society is not surprising. The resettlement programme during the 1950s, which was the precedent of the current public housing programme, was aimed at rehousing squatters and was not means-tested in the beginning. Early squatters were unlikely to be the poorest members of society since they had paid market rents in squatter areas where housing units were more spacious than the old private tenements. Later, squatters were primarily those evicted when old private tenements were torn down or those who took advantage of the resettlement policy and turned themselves into squatters by exiting from old private tenements. There was no presumption that they would be the least well-off in society.

Well-off tenants on the other hand, are encouraged to buy property in the private market, but it creates a problem. These tenants see no reason to relinquish their PRH units, so they end up withholding these units from less well-off households and individuals in the society. Consequentially, property prices in the private market continue to rise, but old PRH units will not be released because there is no market for them.

Moreover, without harnessing the power of the market to meet the needs of households, the crucial long-term consequence of the PRH regime is that these occupants became tentatively, or even permanently, immobile and nailed to their units in estates that were far away from choice jobs, choice schools, and relatives and friends.

If some significant fraction of these households is not poor and can afford private housing units, then there will be pressure for private property to rise, due to unsatisfied demand for housing accommodation. In an odd

way the increase in private rents over time has provided perverse rationale for the smaller size of PRH units, since their rents have become lower relative to rents in the private sector.

A means-test and a double-rent policy was eventually introduced for those who were not squatters and well-off tenants ten years after they were admitted into the programme. This has had only a limited impact on recovering units from existing tenants although it has made tenants who did wish to be means-tested to pay higher rents.

3.3 Ineffective Flat Recovery

The HOS has been used to recover public housing units from well-off tenants alongside the use of means-testing and a double-rent policy. Progress has been painfully slow and is not very effective (see **Table 7**). This is to be expected, as administrative measures have limited effects unless they are draconian, but this is unlikely to be the approach adopted when the objective is not to drive out tenants but to entice them to leave with an HOS unit.

Table 7. PRH flat recovery by the Housing Authority, by reason

	2008/2009	2009/10	2010/11	2011/12	2012/13
Voluntary surrender by tenants	5,400	4,850	5,145	4,560	3,645
Issuance of notice-to-quite	1,683	1,518	1,359	1,403	889
Purchase of HOS flats sold by the Housing Authority	1,984	482	1,933	7	0
Purchase of HOS flats on the Secondary Market	1,176	1,228	1,500	1,181	908
Total Net recovery	10,243	8,078	9,937	7,151	5,442

Source: Government press release.

In summary, because of allocation decisions made in the past, many households in the public housing sector are well-off, but many households in the private sector are not. Well-off tenants consider the units they occupy to be too small given their income. Even though many well-off public tenants live in units that are too small for their needs, many poor households living in the private sector have no access to these same units, which would be more suitable for their case. Without a market, the re-matching of tenants and housing units cannot take place legitimately. If the status quo is kept, the malign forces of our inequitable housing regime will continue to foster social contentions for years to come.

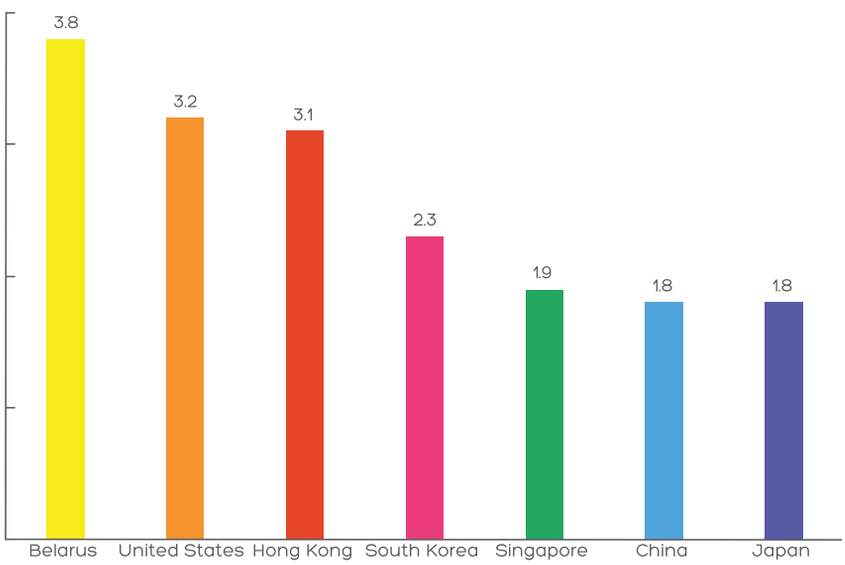
Nonetheless, inequity is but one of the many issues related to the current system. Another equally ferocious issue arising from the public housing programme: divorce and family breakdown.

4. Divorce and Family Breakdown

4.1 Public Housing and Divorce

It may be surprising to know that the crude divorce rate in Hong Kong was 3.1 per 1,000 people in 2013, nearly three times higher than that in 1991. This places Hong Kong in the top ten in the world in divorce, ahead of China, Japan, Singapore, and South Korea, but lower than the United States and top-placed Belarus (see **Figure 3**)

Figure 3. Divorce rates of selected economies per 1,000 people, 2013

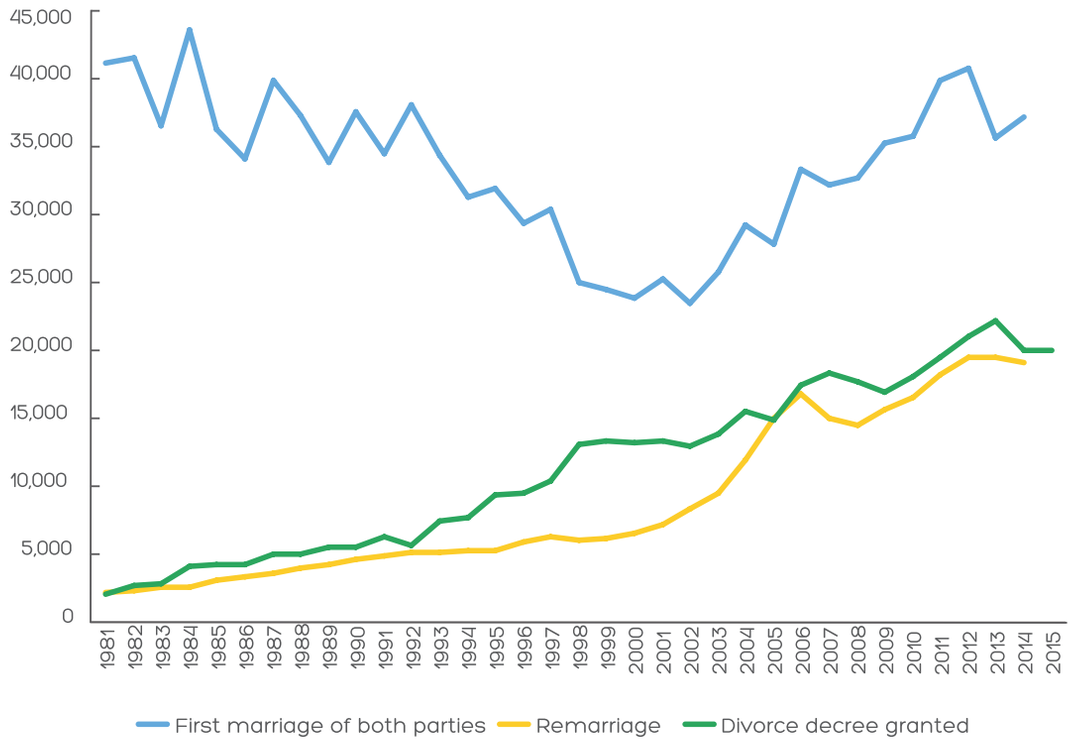


Note : Data for China pertains to 2012.
Sources: Census and Statistics Department, United Nations, and National Centre for Health Statistics.

Figure 4 shows that the number of divorces in Hong Kong has been rising since 2001. In 2014, there were about 20,019 divorces, 37,217 marriages, and 19,197 remarriages.

What explains the rise in divorce? The Report contends that a possible explanation is rooted in the PRH allocation criteria which may possess incentives for unhappy couples to initiate divorce. The following sub-chapter will lay out the evidence by providing a demographic analysis of the people residing in PRH.

Figure 4. First marriages, divorces, and remarriages



Source: Census and Statistics Department.

4.2 Demographics of Public Rental Housing

Existing studies have shown that divorce rates are higher among lower-income households than in high-income households (Bramlett & Mosher, 2002; Raley & Bumpass, 2003). This is also evident in Hong Kong. **Table 8** indicates that the number of divorced men and women has risen rapidly over time. In 1981 there were 12,580 and 11,160 divorced men and women. By 1991 these had risen to 21,700 and 28,920, and by 2015 to 90,800 and 179,600.

Combining the observations from **Tables 8** and **9**. It is apparent that divorced men and women are heavily concentrated in low-income PRH. In 2011, about 28% of married persons were living in PRH, while it was 44% of the divorced (See **Table 8**), and the situation even worsened in 2015. In the meantime, in 2011, divorced individuals are much more likely to be in the lowest income quartile in the society if they are PRH resident, compared with their counterparts who reside in other types of housing (See **Table 9**).

Additionally, as **Table 8** shows, the number of divorced women living in PRH has increased substantially compared to the number of divorced men living in PRH. It is likely that divorced women remain as PRH tenants while divorced men move out. Some of these divorced men who remarry subsequently would apply for PRH again, if their incomes still qualified. Hong Kong's public housing estates are transforming into areas of growing low-income divorced households. This observation would be investigated more thoroughly in **Chapter 5**.

Table 8. Housing tenure of married and divorced individuals, by sex ('000)

Marital status	Married	Year	Public renter	Private renter	Public owner	Private owner	All
Married	Male	1981	334	369	7	296	1,005
		1991	474	255	101	467	1,298
		2001	522	269	282	580	1,652
		2011	513	306	305	680	1,803
		2015	474	236	299	682	1,690
	Female	1981	342	324	7	306	979
		1991	464	206	103	476	1,249
		2001	480	242	278	570	1,570
		2011	490	290	303	681	1,763
		2015	468	270	316	797	1,851
Divorced	Male	1981	4	6	-	3	13
		1991	8	6	1	6	22
		2001	22	17	6	14	58
		2011	42	22	11	21	95
		2015	48	15	10	18	91
	Female	1981	3	5	0	3	11
		1991	9	7	2	11	29
		2001	33	25	11	25	94
		2011	79	35	23	42	179
		2015	85	30	32	42	180

Source: Census and Statistics Department.

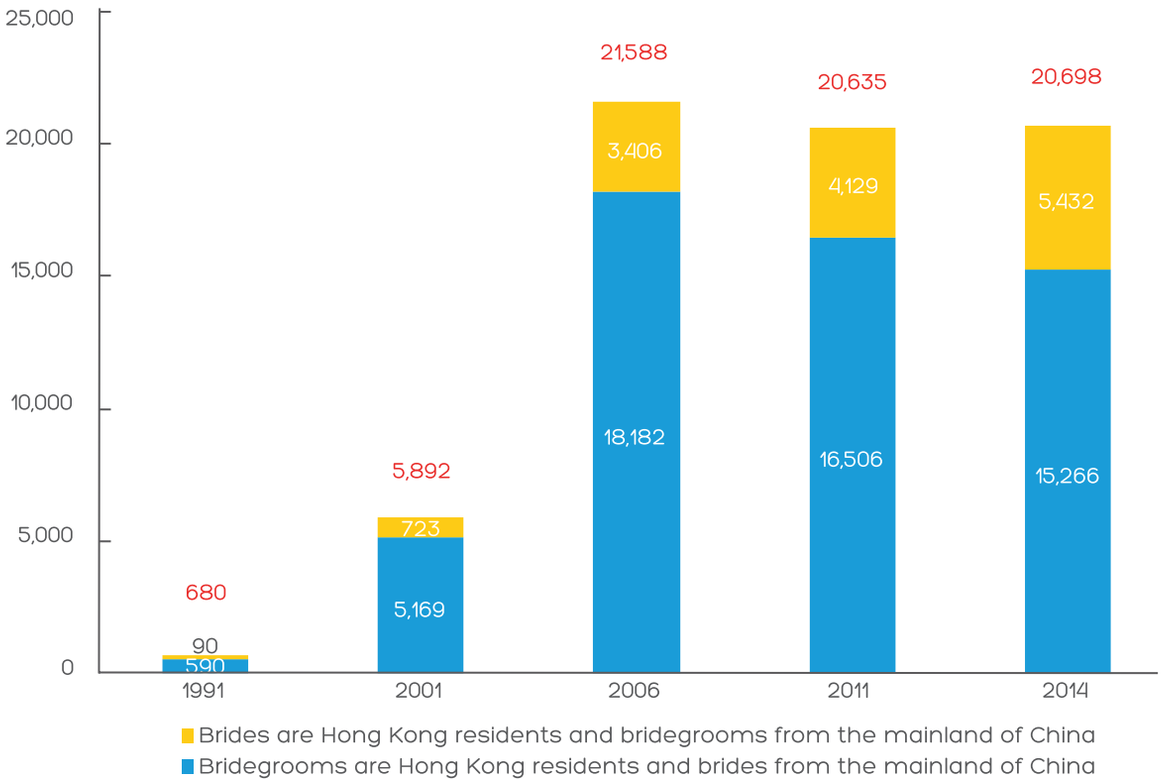
Table 9. Number of divorced individuals among households (aged 20 - 65) by income quartile and by housing type

	Income quartile	1976	1981	1986	1991	1996	2001	2006	2011
Number of divorced individuals in public renter households ('000)	Bottom	0.9	1.5	3.5	5.4	12.1	23.3	40.3	62.7
	2nd	0.5	0.7	2	2.8	6.4	8.8	17.1	19.1
	3rd	0.4	1	1.9	2.1	3.9	4.3	7.6	7.4
	Top	0.3	0.6	0.8	0.7	1.4	1.1	1.8	1.2
Number of divorced individuals per thousand households among public renters	Bottom	12	19	34	40	69	128	183	247
	2nd	6	7	15	19	41	64	106	113
	3rd	5	10	16	18	34	46	84	82
	Top	5	9	11	12	25	35	72	73
Numbers of divorced individuals in all other households ('000)	Bottom	3.2	4.3	7.5	7.5	12.3	25.5	30.3	34.3
	2nd	1.6	2.1	3.8	4.4	10.3	18.4	21.4	26.1
	3rd	1.0	1.7	3.2	4.1	9.7	12.4	18.6	21.4
	Top	1.3	1.9	3.8	4.8	7.8	10.8	14.5	17.0
Number of divorced individuals per thousand households among other types of housing	Bottom	23	23	36	40	59	110	134	153
	2nd	13	12	23	24	45	67	76	83
	3rd	8	10	17	20	36	39	53	55
	Top	8	10	16	18	24	28	34	37

Source: Census and Statistics Department.

After 2000, the number of recent immigrants in PRH picked up as a result of the accelerating pace of divorce and cross-border marriage (See **Figure 5**). This was in part triggered by the liberalisation of PRH allocation rules for recent immigrant households in 1998, which led to the rise in number of recent immigrant households (with at least one member having resided in Hong Kong for less than 20 years) living in PRH units from 129,000 in 1996 to 203,000 in 2011.

Figure 5. Number of marriages registered in Hong Kong with bridegrooms / brides from the mainland of China



Source: Census and Statistics Department.

4.3 Costs of Divorce

The growing number of divorced women living in PRH units implies a rising number of children growing up in broken families in PRH estates. This is not conducive to upward social mobility but sets the stage for the production of a new underclass that perpetuates intergenerational inequality and low social mobility. Children raised in divorced PRH households may lack good role models. While individual cases would vary, this is a plausible scenario. Children in broken families grow up with their mothers, possibly on welfare. They seldom see their fathers because some may have remarried and live in another PRH unit with a bride across the border. Siblings in broken families are sometimes separated with custody assigned to different parents so that both parents can be eligible to apply for PRH.

The literature on the socioeconomic impacts of divorce primarily focuses on two levels: the impact on the children of the divorcees and the impact on the divorced couples themselves. A meta-analysis involving 92 studies conducted by Amato and Keith (1991) found that compared to children whose parents are married, children of divorced parents were more likely to exhibit worsened measures of well-being such as school achievement, conduct, psychological and social adjustments, self-concept, and parents to child relations.

Divorcees themselves are subjected to economic hardship and social isolation, Biblarz and Gottainer (2000) concluded that divorced

individuals were more likely to exhibit symptoms of depression and anxiety, substance use, the deterioration of health and posed a greater risk of mortality.

Other studies have also shown the undesirable economic ramifications of divorce. Examining data in Utah in the United States, Schramm (2006) calculated the economic consequences for the 9,735 divorces in Utah during 2001 to cost the state and federal government nearly US$300 million in direct and indirect costs. In addition, the prospects of low-income and interpersonal insecurity may be passed on to the children of divorced parents, hence expanding the cycle of economic distress (Ross & Mirowsky, 1999).

4.4 Incentives to Divorce

The Report believes that implicit in the PRH allocation criteria is an in-built incentive that provides encouragement for unhappy couples or low-income households to initiate divorce and remarry across the border, where marital opportunities are relatively abundant. A low-income divorced parent could apply for readmission to the PRH programme, often with preferential consideration, if he or she had dependent children or remarried. The current PRH allocation criteria favour married couples but do not discriminate between first marriages and remarriages.

These perverse incentives further tilt the balance in favour of divorce among low-income families and generates a penalty on children who inevitably suffer from family breakdown. After divorce, they became single divorced parents with dependent children. One parent was able to remain in the PRH unit, while the other ended up renting housing in the private rental market. This aggravates the demand for both public and private housing where supply is limited.

Hence, because of the considerable demand for private housing, the divorce rate in Hong Kong is both a cause and an effect of higher housing prices and rents. Furthermore, it distorts the measured inequality in household incomes which has been significantly augmented through the PRH programme.[4]

The public housing regime has not only failed to protect the relative and absolute wealth position of families without property, but also, and worse still, has created perverse incentives that have increased the divorce rate among those who are poor. As a consequence, the combined effects of the PRH programme are forging powerful incentives that expedite family breakdown, worsen economic inequality, and create bad neighbourhoods in public housing estates.

4. See **Appendix II** for further details on the distortion of measured inequality of household incomes.

5. Intergenerational Mobility and Poverty

5.1 A Global Phenomenon

The rapidly rising number of divorces presented in the previous chapter is suggestive of some very real and alarming concerns about how poverty is being formed in Hong Kong and how it may affect social mobility and cause dynamic poverty across generations. Dynamic poverty differs from static poverty in that it concerns poverty across generations due to the lack of upward social mobility.

Low intergenerational mobility is evident across the globe. In Charles Murray's book, Coming Apart: The State of White America, 1960-2010, he showed that between 1960 and 1980, the divorce rate of working-class Whites rose from about 5% to about 15%. The trend continued and by 2010 had increased to 35%.

The well-educated saw a parallel rise between 1960 and 1980: their divorce rate rose from about 1% to about 7.5%, and was flat from 1980 to 2010. The difference between the two groups is reflected in the rates for children growing up in broken homes: a steady increase for the working class, a low plateau for the well-educated. Murray revealed that the percentage of well-educated people in happy marriages has sharply rebounded, while the percentage of working class in happy marriages has crashed.

While his findings are akin to the previous chapter of the Report, what is powerful about his thesis is the unusually high degree of family breakdowns associated with the origin and intergenerational transmission of poverty among unskilled low-income families. Their children suffer as a consequence and end up in poverty themselves.

By contrast college graduates do well not only economically but also in their family life. Their children have nurturing and secure childhoods, and lead productive, successful, and fulfilling lives when they grow up. Rising intergenerational inequality is produced when the poor have broken families and stay in bad neighbourhoods, while the rich have intact families and live in good neighbourhoods.

Striking a similar chord, political scientist from Harvard University Robert Putman reinforced Murray's thesis with his book Our Kids: The American Dream in Crisis. He showed that in the United States, children

access to core institutions to foster their development is increasingly unequal and separate. The children from well-off families grow up in family with two attentive married parents, they attend high-performing schools and are equipped with the necessary life skills to assist in navigating the future road ahead.

On the other hand, the children from low-income, working-class families have little chance of accessing the social capital abundant in well-off families, and thus are emotionally stunted and are unable to climb up the social ladder. Putnam cited a landmark study by Hart and Risley (2003) who estimated that by the time they enter kindergarten, the children from well-off families hears 19 million more words than the children from poor families and 32 million more words than the children whose parents are on welfare. The inequality of the 'haves' and the 'have-nots' results in children having dramatically different outcomes later in life.

5.2 The Problem in Hong Kong

The studies by Murray and Putnam of class division have important parallels in Hong Kong. In the past 30 years, the socioeconomic divide between low- and high-income households has grown progressively wider and economic inequality has segregated the rich and the poor into different neighbourhoods.

The figures in **Table 10** demonstrate that there is a larger concentration of children living in single parent households in PRH estates than in other types of housing. In 2001, 27,454 (or 44.7%) domestic households with single parents live in PRH. In 2011, it increased to 42,820 (52.4%). In 2015, the number rose to 50,100 or 55.8% of domestic households with single parents. Among all other housing types, the proportion has been decreasing over the years.

Table 10. Number / share of children (1-18 years old) living at home with a single parent by housing type

Year	Public rental housing	Subsidised sales flats	Private housing	Total
2001	27,454 (44.7%)	7,311 (11.9%)	26,666 (43.4%)	61,431 (100.0%)
2006	38,635 (50.6%)	8,458 (11.1%)	29,330 (38.3%)	76,423 (100.0%)
2011	42,820 (52.4%)	7,206 (8.8%)	31,679 (38.8%)	81,705 (100.0%)
2015	50,100 (55.8%)	7,500 (8.4%)	32,200 (35.8%)	89,900 (100.0%)

Source: Census and Statistics Department.

This is consistent with the observations discussed in the previous chapter that low-income, divorced men and women are heavily concentrated in PRH. It follows that the PRH estates have become a conglomeration of single parent households that will have an adversarial effect on a sizeable number of children. Their development is stunted causing both income inequality and poverty.

Hong Kong's public housing estates are transforming into areas

of concentrated poverty with more children living with a single parent. These children reside in poor neighbourhoods where there are no good role models to learn from and to emulate. This demotivates them, perpetuates dynamic poverty and affects their future likelihood of moving up the social ladder.

Since the existing public housing programme implicitly encourages divorce, especially among the poor, it is leading to the formation of a new underclass inflicted with reduced future prospects.

5.3 Income Inequality

Rising income inequality is linked with the problem of low social mobility among the less well-off families. It is made more difficult because many born into lower and lower middle-income families have made too little human capital investments because their parents are divorced.

Assortative mating further strengthens these effects as women have become better educated over time. Better-educated men are now more likely to marry better-educated women, and this is further worsening the human capital investment opportunities of the young generation in less well-educated families. They have fallen behind long before they could receive tertiary education. So despite subsequent efforts to catch up, they are still disadvantaged.

Their fate is in sharp contrast with the young generation from upper and upper-middle income classes whose parents are much less likely to be divorced and are able to make massive amounts of human capital investments from early childhood.

This problem can be remedied if more individuals become better educated. Investing in human capital would directly raise the incomes of more individuals by making them more productive. It would also indirectly increase the incomes of the less well educated in the population by reducing their relative supply. The rising income inequality is therefore a failure of society and government's public housing policies which discourage human and social capital investment in poor, single parent households.

Hence, empirical evidence will be presented in the following sub-section to attain the benefits of bona fide homeownership and its concomitance with borrowing on home equity to invest in children education.

5.4 Human and Social Capital Investment

This Report believes that extending homeownership is essential to family investment in both human and social capital. Indeed, many studies have shown families who are homeowners are more likely to invest in childhood development and neighbourhood stability.

In a linear regression analysis on intergenerational mobility in schooling attainment in Hong Kong (Wong, 2015b), it was found that children who grew up in families that were homeowners, either in the private or public sector, had significant schooling attainment advantages compared to those living private rental housing. This connotes that homeownership is a very powerful proxy for additional household wealth that is not adequately measured by parent's education and income. It was found that the schooling advantages among those living in subsidised sales flats, predominantly those in HOS units were as strong as those living in owned homes in the private sector for the census years between 1981 and 2001. However, the effects weakened significantly in the 2006 and 2011 census years.

Additionally, the findings also revealed strong evidence that children will experience significant education disadvantages if they were recent immigrants, had parents who were recent immigrants, and grew up in households with a single parent. The much discussed generational gap between young people born in the 1980s and 1990s and their elders may reflect the fact that a growing proportion of them grew up in single parent households. The study concluded that the role of education is an important factor for increasing productivity, and is by far the largest investment a person can make in human capital.

This phenomenon is not restricted to Hong Kong. The results of other earlier studies had also appeared to show that homeownership has a positive effect on childhood development and human capital investment. Green and White (1997) found that homeownership significantly raises the chance of teenage students staying in school and lowers teenage pregnancy compared to those in rental households in the United States. Aaronson (2000) found that parental homeownership in low-income neighbourhoods has a positive correlation on high school graduation. Huarin, Parcel, and Huarin (2002) concluded that owning a home compared with renting leads to a 13% to 23% higher quality home environment, better cognitive ability and lower children's behavioural problems.

Harkness and Newman (2003) indicated that among American children in families with income less than 150% of the federal poverty line, homeownership promoted educational attainment, earning, and welfare independence when the child reaches young adulthood. This was not the case for children of families with incomes more than 150 percent of the poverty line. Their findings suggested that homeownership effects are not only attributable to unobserved characteristics of homeownership, but have causal benefits on adulthood development of children from less well-off families.

The literature on the relation between homeownership and social capital investment is equally sanguine. Rohe and Stewart's (1996) analysis of U.S. census data on homeownership and neighbourhood development revealed that changes in homeownership rates are significantly associated with increased property values. They argued that this was because homeowners, unlike renters and landlords, have an economic and use interest to maintain high standards in their neighbourhood. Thus, the greater the security of their property, the greater the investment they

would make in it, and vice versa.

DiPasquale and Glaeser (1999) demonstrated that standard economic incentives from the effects of homeownership and tenure does influence investment in social capital. Areas with more homeowners have lower government spending, but have a larger portion of government budget on education and highways.

More recently, Chetty and Hendren (2015) illustrated that the effects neighbourhoods have on intergenerational mobility varies substantially. For each additional year a child spends growing up in an upwardly mobile neighbourhood in the United States, adulthood household income increases by 0.8% compared to the national average. In contrast, each year spent in a bad neighbourhood decreases earnings by 0.7%.

The socioeconomic ramifications of the public housing policy are dire and costly, the recommendation of OHKF to privatise future public housing units should therefore be heeded. Yet, any proposal to reform Hong Kong's public sector housing policy and to create a market in public sector housing units should consider whether justice is served by providing an asset on subsidised terms to less well-off households. This consideration will be discussed in the following chapter.

6. Public Housing Policy and Social Justice

6.1 The Injustice of Evaporating Resources

The current public housing policy is unjust because the society losses the value inherent in the public sector housing unit, the physical premises itself, and the land that it occupies. The evaporation of resources benefits no one.

First, the taxpayer hardly ever collects the unpaid land premium because, as stated in **Chapter 1**, very few households ever pay it. A receivable that cannot be collected after many years should be written off and not carried on the books.

What is even worse is that, 60 years after construction, many of these units will be so rundown that they will have to be redeveloped. By then, the unpaid land premium will most certainly reach an astronomical figure. The only party that could redevelop these units would be the government. The injustice is that taxpayers would be forced to foot the bill yet again.

It should be reminded at this juncture that the original public housing policy objective was to offer a way to establish a "housing ladder", with each rung of the ladder representing a stepping stone to "move up" from PRH to HOS and eventually to private housing. At the current setting, it is extremely difficult, if not entirely impossible to satisfy such a goal. There is virtually no hope of leaving the public housing system once a household enters it.

Second, the subsidy provided by taxpayers to the household is the difference between the market value of the unit and the price the household pays for its use as shelter. Over time, the amount of the subsidy will increase as land values increase. The odd situation is that the cost of the subsidy paid by the taxpayer is larger than the benefits perceived by the household because a market for such units does not exist. It is unjust that the taxpayer pays for the asset value of the unit, but the household receives only the shelter value of the unit.

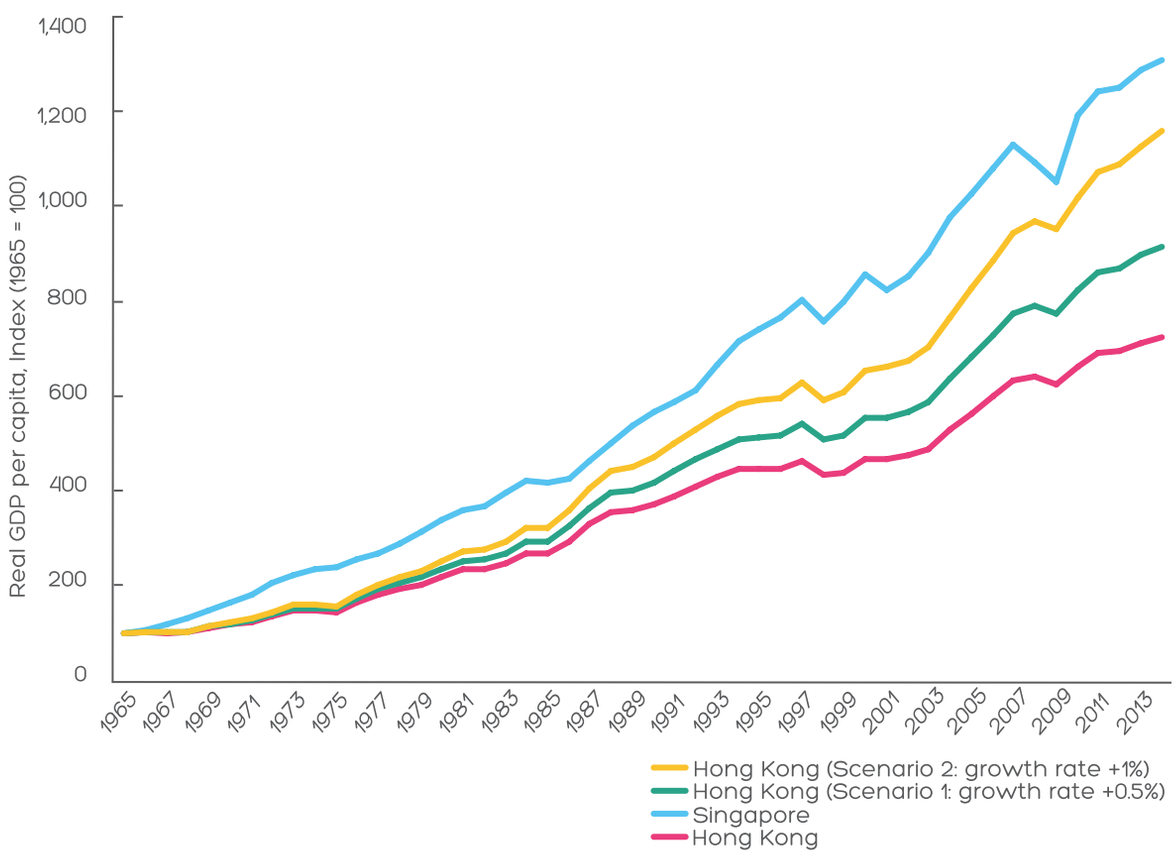
6.2 Different Economic Consequences of Housing Programmes in Hong Kong and Singapore

It is useful to consider what taxpayers lose when they give away a housing asset but then limit the recipient to using it only as a shelter. The difference is a loss to society and nobody gains. To demonstrate the magnitude of the losses, the per capita GDP growth rates of Singapore and Hong Kong is compared. **Figure 6** gives the real per capita GDP profiles for the two cities in their own currencies. Throughout the period, Singapore grew faster than Hong Kong at an average annual rate of approximately 1.35%. As a consequence, a Singaporean who started with $100 in 1965 was making $1,307 in 2014, but his or her Hong Kong counterpart was making only $725. The Singaporean had 80% more income.

This is because Singapore allows for an active market in public housing units. This means it does not suffer the kind of deadweight social welfare losses that are present in Hong Kong in both PRH and HOS units. The factor alone could easily account for most, if not all, of the differences in per capita real GDP growth. The same figure also plots the projected real GDP per capita profiles for Hong Kong under two scenarios. Scenario 1 adds 0.5% to the growth rate, and Scenario 2 adds 1%.

It is conjectured that both Scenarios 1 and 2 underestimate the losses to society of not allowing a market for public sector housing units

Figure 6. Real per capita GDP in Singapore and Hong Kong (including projected Hong Kong real per capita GDP), 1965-2014 (normalised to 100 in 1965)



Source: World Bank.

because they measure only static losses, those that result from denying households the ability to obtain the appreciation in land values.

To illustrate the size of the economic loss that our housing policy has potentially incurred, it is estimated that the gain in housing capital from privatisation and deregulation of the public housing stock would be $3.336 trillion, equivalent to 156.9% of GDP in 2013 (See **Table 11**). The average PRH unit would add $3.36 million to housing capital, the average HOS unit would add $2.05 million, and the average TPS unit would add $1.96 million.

Table 11. Estimates of the value of public housing capital after privatisation and deregulation

	Number of housing units ('000)	Estimated total value of housing units at TPS and HOS "Secondary Market" prices ($bn)	Estimated total value of housing units at open Market prices ($bn)	Estimated increase in value of housing capital (column III - II) ($bn)	Estimated increase in value of housing capital per unit (column IV ÷ I) (mn)
PRH units	728	0	2,448	2,448	3.36
TPS units	123	173	414	241	1.96
HOS uits	316	908	1,555	647	2.05
Total public housing units	1,167	1,081	4,417	3,336	2.86
Total estimated value as percent of GDP (2013)		50.9%	207.8%	156.9%	

Source: Wong (2014).

The dynamic losses have not been included for the calculations in **Figure 6** and **Table 11**; these would represent the forfeiture of potential gain that could have been realised if a person with more resources spent them on enhancing his or her productivity and that of others.

7. The Subsidised Homeownership Scheme

The malign consequences of our public housing programme necessitate a powerful solution. Hence, the Report contends that the SHS will serve as a highly effective panacea to the socioeconomic ills presented in the previous chapters. The capability of the SHS to ameliorate the four ills of our misguided public housing policy are subsequently presented below.

7.1 SHS and the Pursuit of Equality

The inequity in the allocation of PRH generates enormous economic inefficiency and stifles the social spectrum. It would be astute to look for policy alternatives.

A faster, less expensive and non-wasteful solution is the SHS. If it is implemented for future public housing units, more and more of public housing units would become available for rent in the open market. The SHS would lead to the creation of a single housing market rather than two separate markets. Doing so is a simple way to stimulate consumption and investment activities through an injection of property wealth. It would also meet the needs of those who are currently occupying sub-divided units and/or are on the Waiting List for PRH.

Moreover, a market for these units will then quickly emerge, and the economic inefficiencies would be ameliorated in one fell stroke. There would be an incentive for trading to take place and the re-matching of tenants' needs and housing units would come into effect and the problem of inequity could be rectified. With competition, housing units would also be more affordable. A thriving private rental market would provide the housing market with long-term stability.

The SHS would be a triple-win policy. First the Housing Authority would be able to collect more unpaid land premiums and at a much faster rate. Second, HOS owners would know with greater certainty what they actually owed the government from day one, rather than seeing unpaid land premiums fluctuate and over time escalate with market conditions. Third, some HOS units might then become available on the market for rent or sale. Aspiring new homeowners would not have to wait several years for new units to be built as proposed in various government initiatives.

7.2 SHS and a Rewarding Childhood

Additionally, the Report reiterates that the SHS can be a highly effective solution to the problem of divorce. The implementation of the SHS will allow public housing tenants to possess the same rights to that of a private homeowner. Bona fide homeownership in future public housing units would incentivise families to stay together and discourage family breakdown. This can therefore act as a barrier against the costs of a broken family among the children of the divorcees and prevent the build-up of bad neighbourhoods that fosters poverty and lowers social mobility.

The rationale behind the implementation of the SHS to tackle the problem of family breakdown and its adverse effects on children is not unfounded. According to the economics theory of marriage, homeownership functions as a financial and social resource before a marriage decision is made. Ending a marriage would incur a cost, the loss of a house as a major asset. Thus, homeownership can deter divorces.

Furthermore, there is a large body of research associating homeownership with family cohesiveness. In a longitudinal study conducted by Grinstein-Weiss et al. (2014), which examined the relationship between homeownership and the likelihood of marriage or divorce in the United States, it was found that among the study's sample population, the propensity to divorce in married homeowners are less likely than married renters. Similarly, in an earlier study by White and Booth (1991), using an American national panel of married individuals, it was established that homeownership and the possession of assets can act as a barrier to divorce.

These findings lend empirical support to the Report's proposition that by possessing a property asset, a home, it can play a significant role in mitigating the increasing trend of divorce. Moreover, because under our proposal, application for the SHS is restricted to once in a lifetime, this will mitigate the perverse incentive to divorce. As a result, the social, political, and economic costs of family breakdown can be allayed. Children would be less likely to bear the adverse consequences of a separated mother and father, and would experience a safer, more stable, and rewarding childhood.

7.3 SHS and Upward Mobility

Murray (2012) and Putnam (2015) had both shown that intergenerational inequality is an endemic problem in society. The situation in Hong Kong is not different. It is caused and exacerbated by our public housing policies that have divided the population into the 'haves' and the 'have-nots'. This dooms the 'have-nots' to a cheerless future, mired in poverty and crippled by social immobility.

A critical concern for Hong Kong to address in coming up with a long-term housing strategy is to appreciate the important role of housing assets as a store of value for upward social mobility and human capital investment. There is a possibility that social upward mobility would be greatly improved if property assets are held. The fundamental reason why social upward mo-

bility is lacking for those who are able and diligent is their inability to convince people to invest in their future.

The SHS is the most feasible choice to address this concern. The advantage of the SHS is that by allowing bona fide homeownership in future public housing units it provides a cheaper means for arranging finances. By borrowing against home equity, a parent can provide a better education for their children.

Furthermore, families have a stake to stay together when marriages come under pressure. By keeping families together, we prevent more children falling into a state of disadvantage that would be detrimental to their pursuit of upward social mobility. Since social mobility is closely associated with homeownership, the SHS would relieve Hong Kong of the bourgeoning problems of income inequality and poverty.

Bad neighbourhoods would also become a thing of the past. Owner-occupiers of public housing units will have an incentive to maintain the conditions of their dwellings and closely guard the status and security of their neighbourhood. It induces the investment of social capital into the neighbourhood and as a result, a better environment for social mobility can be realised.

Not only can families and stay together and children are benefited, the elderly population can also tap into the property asset and may use it as retirement protection. With a home, a reverse mortgage can allow the elderly population to use the home equity for their retirement in order to meet daily expenses.

7.4 SHS and Social Justice

Our present PRH programme is operated at a recurrent loss year after year. Developing more PRH units is a highly inefficient policy and it drains public spending. Historically, the cost of rental units was financed with cross-subsidies from the sale of HOS units. Since the HOS units are sold at a discount, the land values are not fully monetised. The HOS buyer pays for a fraction of the total land value and the Housing Authority holds onto the rest.

In essence, both PRH and HOS units are financed through monetising part of the land values of the public housing units. The land values are not fully monetised because parts of the land premium is still unpaid and not wholly settled with the government.

If we do not allow public sector housing occupants to trade their units on the housing market, then the society will lose the value inherent in that asset. What is happening is that well-off households are giving valuable assets to less well-off households, but their use is restricted to shelter only. The land values are partly dissipated and therefore lost to all. All households suffer a decline in income as resources are destroyed by limiting their use.

If instead we allow a market to exist, then less well-off households gain a share of the value of the land that would otherwise be lost, and in so doing they put the land resources to better use and raise the incomes of everyone. It is a win-win scenario. The outcome will be socially just.

It would therefore make good sense today to push for the adoption of the SHS so that units are available for both rent and purchase with tenants having the option of renting first and purchasing later.

Hong Kong's low-income households would be more willing to purchase these units if they were priced at an affordable level for them. As long as they are priced to cover at least full development and overhead costs, the government would be able to finance the entire cost of providing subsidised housing through monetising land values. These low income households would be able to benefit at nobody else's expense. This would drive government expenditure on housing down and would help reduce government spending pressure enormously, making scarce government revenues available for other uses.

The SHS would allow for a more just society where resources are yielded for all, allowing people to have greater freedom of choice, and build a better community. By turning Hong Kong into a city of homeowners, it will enable the government to redistribute more resources to other sectors in need.

While it is advocated in the first Report that the SHS should be implemented for newly constructed stock of public housing units only, there remains a potential for the existing stock to be also privatised. In light of the severity and urgency of the situation, it will be socially just for existing public housing occupants to also purchase their units and settle unpaid premium under get the SHS framework, provided that public reception of the SHS is positive.

8. Concerns

8.1 Property Prices

A major concern about the privatisation of PRH and HOS units is that it may lead to a flood of new housing units into the market and force property prices to go down. This may affect long-term asset investment and dissolve family savings. As reiterated in the first Report, the Scheme only covers newly-constructed public housing units and therefore will have little or no effect on the private housing market.

However, OHKF is of the opinion that in the long-term, the existing stock of PRH and HOS units should also be considered for privatisation. While the property price concern of privatising the existing stock is warranted, we believe that the possibility is minimal. This point can be illustrated with the privatisation of public community housing in the United Kingdom during the 1980s. A case study of this is presented to confute and ease the fears that property prices will be affected to the detriment of investors and families.

8.1.1 The Right to Buy

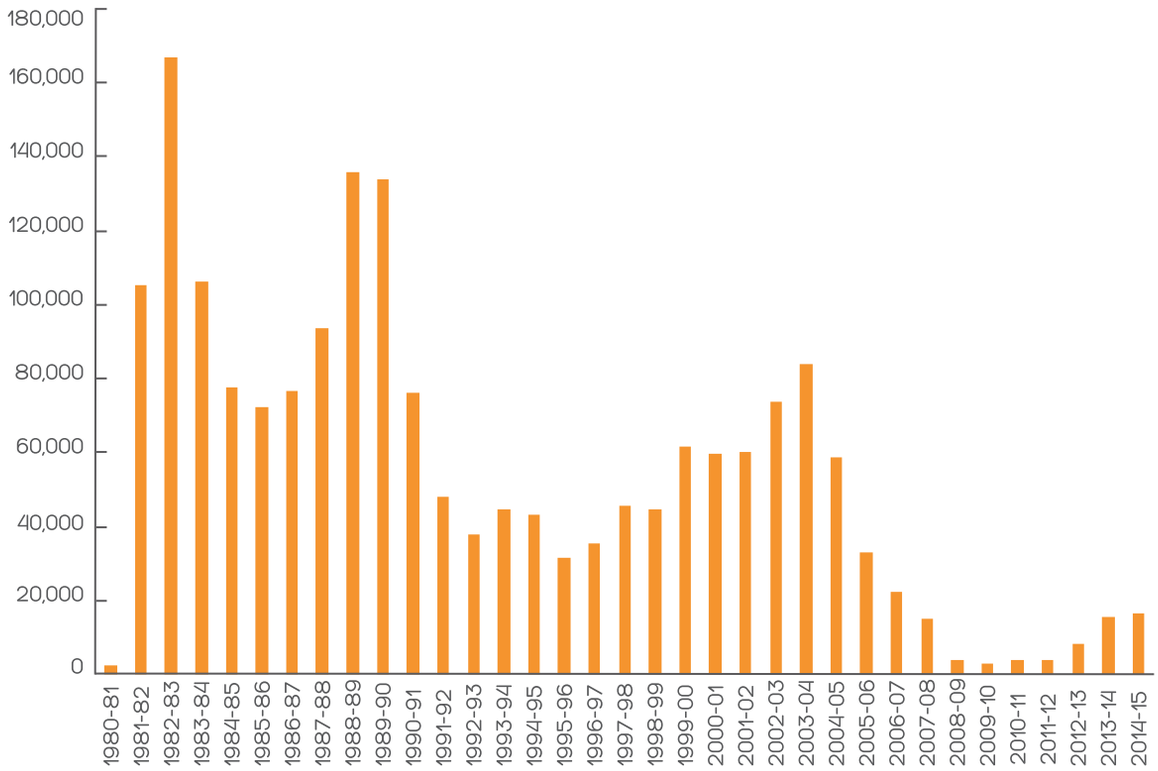
The UK Housing Act, more commonly known as the Right to Buy, was implemented on the third of October 1980. It was a major policy initiative of the Conservative Party led by the late Margaret Thatcher who swept to power in the UK general election of 1979.

By international standards, the UK in 1980 had a large social housing stock with council housing catering for 6.5 million households, or nearly one third of total UK households. The Conservative Party saw the Right to Buy as a mechanism for increasing owner-occupation and also as a response to the desire of some tenants to own their place of dwelling.

Since the introduction of the Right to Buy, more than 1.9 million council homes had been sold in England alone. **Figure 7** indicates that the initial reception of the Right to Buy was overwhelmingly positive with social housing sales breaching the 160,000 mark in 1983. It declined in the mid-1980s and rose again in the late-1980s. The second surge can be attributed to the extension of maximum discounts for properties.

Overall, in England, the total number of social housing sales under the Right to Buy was about one third of the cumulative stock of council housing units.[5]

Figure 7. Social housing sales: Annual Right to Buy sales for England: 1980-81 to 2014-15



Source: GOV.UK.

As a consequence, in 2003 household dwellings in the social rented sector dropped to 12% of household dwellings (see **Table 12**). The total number of owner-occupants rose from 12.44 million in 1981 to 18.14 million at its peak in 2003. This trend however, reversed slightly in the past decade due to declining affordability of homeownership.

Table 12. Dwellings by housing tenure in the UK (%)

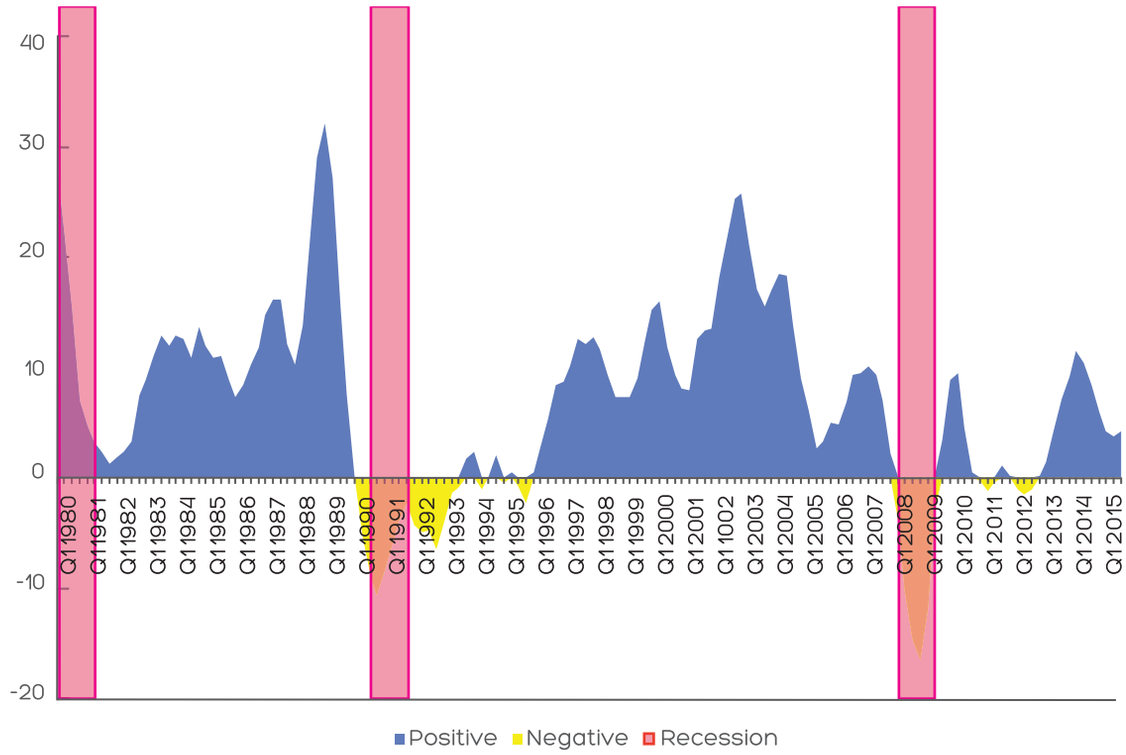
Housing tenure	1981	1991	1995	2001	2003
Homeownership	56.6	65.9	66.9	69.1	68.6
Local authority rented	30.5	21.8	19.1	14.5	12.2
Privately rented	10.8	8.5	9.4	9.6	11.2
Other	2.2	3.7	4.7	6.8	8.0

Source: GOV.UK.

Yet since 1980, UK property prices have fallen in only seven full years and these property down-cycles usually coincide with economic recessions (see **Figure 8**). Most of these occurred in the recession of the early 1990s and the biggest drop was sustained in the 2009 Financial Crisis. Though the first surge of Right to Buy sales in the early 1980s corresponded with a lower rate of increase of house prices (but still an increase); in the contrary, the second surge of Right to Buy sales in the late 1980s corresponded with the highest annual increase in house prices the UK had experienced from the period 1980 to 2015.

5. This figure was reached by dividing the number of social housing units sold as of 2015 (1,990,791) by the sum of the number of social housing units in 1980 (5,068,000) and the number of social housing units built from 1981 to 2015 (951,250).

Figure 8. UK house prices, percentage annual change, 1980-2015



Source: Nationwide.

After all, we hold that instead of changes in homeownership, ultimately property prices are governed by fundamental demand-and-supply factors over the long run, which should be captured by changes in economic variables. To illustrate this, we have conducted a fixed-effect panel regression using data from over 30 advanced economies. The results suggest that there is no statistically meaningful relationship between homeownership rate and housing prices.[6] In other words, granting more households the full property rights to their housing units will not necessarily lead to a drop in home prices.

8.2 Unfairness

Another major reservation to the SHS is the perception of unfairness, that public tenants will receive a 'double benefit' of a low rent and a discounted price from the government.

The rationale behind this reservation is flawed on two accounts. Firstly, the so-called 'discount' is not a genuine discount per se since the subsidised price from the SHS will be repaid in full. The government will merely be providing the financing, and the buyers will still have to pay off the down payment and mortgage loan. The SHS can even recover the full market price of the unit upon the settling of the unpaid premium, which would no longer be fluctuating with the market value under the SHS.

Secondly, the SHS subsidy on land values is not something that society loses to the household. The household already occupies

6. See **Appendix** III for further details on the results of the regression analysis.

the premises. The premises and the land it takes up cannot be used by anyone else, and therefore there is no cost to society. Providing a larger subsidy to the occupant-owners means they can then choose to sell those units on the open market and can therefore unlock the hidden value to be redeployed for a better use, a use that would not have been possible or permitted if the right to sell the units were infeasible. It is therefore not a double benefit. It is merely completing the other half of the benefit that was not initially provided.

As thing stands, the current PRH arrangement is a great subsidy in itself. The resource required to keep rents low among PRH tenants is considerable, and in actuality it is a long-term subsidy for generation after generation.

To illustrate this point, say a unit that is rented out for $20,000 per month in the open market is rented to a PRH tenant for $3,000 per month. The government monthly subsidy for the PRH tenants amounts to $17,000. In 20 years' time the accumulated subsidy, without accounting for rent and market adjustments, will be in excess of $4 million. In other words, subsidising the unit for 20 years is equivalent to covering the full cost of the unit.

Table 13 shows that from 2008 to 2013, the average annual PRH turnover rate was at 0.92%. This implies that there is effectively very little turnover of PRH units, and by continuing to subsidise sitting tenants of PRH it means that there is no residential mobility. The present mechanism of a rental subsidy ad infinitum is wasteful and illogical, instead the same amount of resources could be used through the SHS to provide a strong incentive for occupants of public housing units to strive for bona fide homeownership.

Table 13. PRH units' turnover rate, 2008-09 to 2012-13

	2008/2009	2009/10	2010/11	2011/12	2012/13
Net recovery of PRH	10,243	8,078	9,937	7,151	5,442
Stock of PRH units	741,200	744,600	747,100	768,100	772,100
Turnover rate	1.38%	1.08%	1.33%	0.93%	0.70%

Source: Government press release.

9. Conclusion

Due to globalisation and technological advancement, wealth and income inequality is a worldwide phenomenon and is not constrained to Hong Kong alone. Governments from all over the world have sought to tackle this problem with little headway. Fortunately, the future of Hong Kong is more optimistic than others. Due to the fact that nearly half of the population of Hong Kong resides in public housing, this provides a golden opportunity to mitigate the unequal distribution of capital by providing homeownership and therefore an asset, possibly the most valuable form of capital, for the relatively lower-class citizens living in public housing.

The Report has suggested that the effects of the current public housing programme divides the population into the 'haves' and the have-nots'. This perpetuates the inequity of housing allocation among older PRH units, the widening of the inequality gap among classes, as well as driving divorce and family breakdown that consequentially leads to intergenerational poverty and lower social mobility, and is an injustice to the population of Hong Kong. A practical solution to address these complications all at once would be to strive for bona fide homeowners and boost homeownership rate.

Therefore, the Report is optimistic that the SHS will bring about positive externalities for the society in Hong Kong as a whole. A city of homeowners with a more equal distribution of assets would unify Hong Kong and in the long-run the fissure between the 'haves' and the 'have-nots' would be reduced substantially. It is possible that the bellicose grievances brought about by the housing policy could also be significantly diminished. The pursuit of a more equal and a more unified Hong Kong could be achieved.

Appendix I: A Note on the Resettlement Programme

In most countries, governments are not involved in providing housing, and certainly not on the scale of Hong Kong, where some 50% of the population live in public housing units. This is a post-war phenomenon: until 1954, the Hong Kong government was not involved in building homes. The decision to adopt such an approach was the product of a set of unique circumstances and misguided government policy in the immediate post-war years.

First, housing supply could not be easily increased at that time. Private developers faced formidable constraints in redeveloping the urban housing stock. Rent control imposed on pre-war housing in 1947 made it difficult to evict tenants for redevelopment.

Second, the massive influx of immigrants increased the population from 600,000 in 1945 to 2.3 million in 1951 and led to an explosive growth in demand for housing. No society in peacetime had experienced such a phenomenon. It was a unique situation. Land available for development was invaded by about 300,000 squatters seeking alternative housing from the old private tenement apartments.

Third, the government was initially reluctant to facilitate housing development despite intensive lobbying from private business interests. There was general hostility towards private developers, many of whom took part in building squatter housing.

The old tenement blocks were packed with massive numbers of immigrants and returning residents. Most became subtenants. A small proportion of the new arrivals spilled over into squatter areas on the fringes of the urban areas by occupying land illegally. The government soon realised that development had become impossible because rent control had made it difficult to redevelop land within the urban areas, and land on the perimeter was illegally occupied by squatters. The only politically feasible to secure land for development was to resettle squatters into public sector housing units and reclaim the land they had occupied.

The Shek Kip Mei Christmas fire in 1954 provided an ideal opportunity for the government to introduce Resettlement Estates as a solution for dislocated households and to clear squatter areas.

The government therefore became a provider of public housing by default. This path may have been motivated in part by public relations reasons, to put a humanitarian face on its actions to clear squatter housing, but this secondary reason subsequently became the main justification for the continued growth of the public housing programme. After the social disturbances of 1967, the public housing programme became the centrepiece of a policy to restore public confidence and calm the community.

There could have been other strategies, but these were not explored. Hence, Hong Kong's housing strategy has lacked any forward-thinking goals. Moreover, it is characterised by a high level of government involvement in the housing market.

Appendix II: Measurement of Household Income Inequality

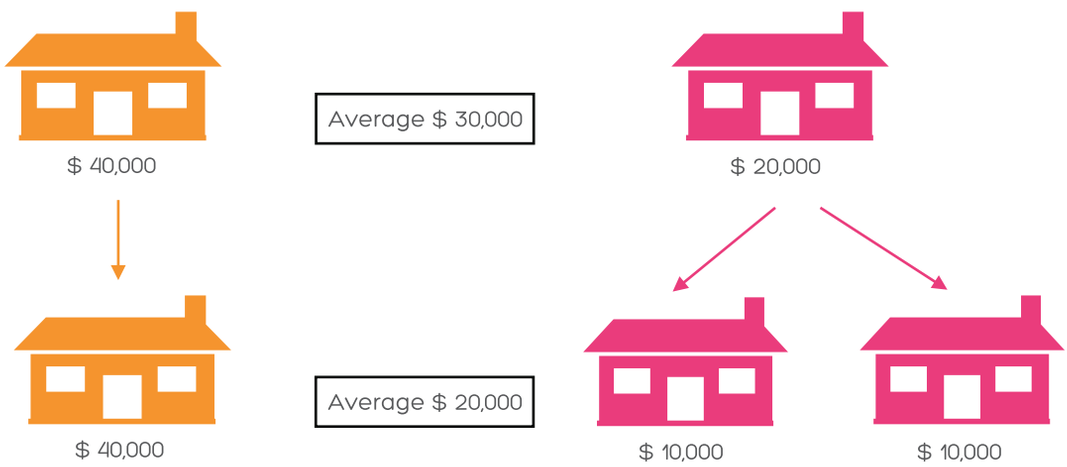
When the divorce rate is rising, especially when it is rising disproportionately for poorer people than for wealthier people, then the measurement of household income inequality could be fairly distorted. This is a purely statistical point about the way household income is measured. Below is a stylised example to demonstrate this.

Suppose there are only two households in society, each consisting of a working husband and wife. One household has an income of $40,000 (the husband and wife each earn $20,000), and one has an income of $20,000 (the husband and wife each earn $10,000). The average household income in this two-household society is $30,000.

Now suppose the husband and wife in the lower-income family gets divorced. They each keep their jobs. Now there are three households, one earning $40,000 and two earning $10,000. The average household income has fallen from $30,000 to $20,000, a drop of 33% even though everyone's income is unchanged.

This example shows that, during a time when individual income is actually unchanging, a rise in the divorce rate among families below the average income is going to pull down the measured rate of average household income.

Figure 9. Distortion of household income inequality



Appendix III: Homeownership Rate and Housing Prices

As discussed in Chapter 8, there have been concerns that an increase in homeownership upon the privatisation of public housing under the proposed SHS might trigger undesirable fluctuations in the property market. This unease warrants further study.

Methodology

To investigate into this concern, we have conducted a panel regression with fixed effect to explore the nexus between homeownership rate and home prices variation. Movement of home prices is modelled as follows:

[illegible]

[illegible] represents the home price indicator, measuring the percentage changes of residential properties in a given economy *i* at time *t*, where *t* denotes a particular year. *X* is a vector of economy-specific control variables that would conceivably affect home prices, e.g. GDP growth, inflation and interest rate [illegible] denotes the homeownership rate of economy *i* at time *t*.

To control for any omitted characteristics which are constant across economy yet are different across time, e.g. evolution of regulatory environment which might impact a group of nearby economy equally at a given year, a vector of binary variables Y representing different years is added. It equals 1 if the observation belongs to a given year, and is set to be 0 otherwise[7]. Finally, the error [illegible] captures an economy-specific time-invariant component [illegible] and an economy-specific and time-variant component [illegible].

Rewriting the above equation in time period t-1 gives:

[illegible]

where [illegible]. A panel regression model with fixed effect is numerically equivalent to taking a first difference of the two equations, i.e. the two states of the economies in two adjacent periods of time. Differencing [illegible] yields:

[illegible]

7. For example, if the observation is in the year 2004, then the variable representing the year 2004 will be set to 1, whereas those representing the years 2005 to 2014 will be set to 0.

• •denotes the differencing operator that takes the difference of the variables over time period *t* and *t-1*. During this process, unobserved economy-specific heterogeneity • ∴that may correlate with other economy characteristics that are included in the controls vector *X* is removed. Empirically, we are interested in the sign and statistical significance associated with • • ∴

Data

Our data is a set of annual statistics pertaining to 33 economies over the period 2004 (or whichever earliest year) to 2015, with a total number of observations of 310. The definitions and sources of each non-binary variable is summarised below.

The dependent variable is:

- *Home Price Index (HPI)*: Measures the percentage changes of residential property prices in a given economy in a given year. Data is retrieved from Eurostat and CEIC for overseas economies, and Rating and Valuation Department for that pertaining to Hong Kong.

The independent variables are:

- *Homeownership Rate (HOR)*: Measures the ratio of owner-occupied units to total residential units in a given economy in a given year. Data is retrieved from Eurostat and CEIC for overseas economies, and Census and Statistics Department for that pertaining to Hong Kong.

- *Inflation rate (included in the vector X)*: Measures the percentage change of the consumer price level of a given economy in a given year. Data is retrieved from Eurostat and CEIC for overseas economies, and Census and Statistics Department for that pertaining to Hong Kong.

- *GDP growth rate (included in the vector X)*: Measures the percentage growth of GDP of a given economy in a given year. Data is retrieved from Eurostat and CEIC for overseas economies, and Census and Statistics Department for that pertaining to Hong Kong.

- *Nominal Interest Rate (included in the vector X)*: Measures the short-term base nominal interest rate or interbank interest rate of a given economy in a given year. Data is retrieved from CEIC. **Table 14** describes the proxy used for nominal interest rate in different economies.

Results

The formal regression results are presented in **Table 15.** In the baseline regression with no fixed time effect, as shown in Column (1), the coefficients associated with GDP growth and inflation rate are positive and statistically significant, whereas that for interest rate (which captures borrowing costs) is mildly positive but statistically insignificant, as is the impact of homeownership rate on home prices.

After fixed time effect is controlled for, as shown in Column (2), all coefficients attached to real economic variables are consistent with economic intuitions and are noticeably greater in magnitude when compared with Column (1), i.e. economic growth and inflation is positively related to home prices, while the opposite is true for nominal interest rate. In this model, homeownership rate again appears to have a positive impact on home prices, albeit statistically insignificant.

To explore further the nexus between homeownership rate and home prices, we presented a third regression result in Column (3) with a squared term of homeownership rate added. Interestingly, the coefficient associated with homeownership rate is still positive but becomes greater in value and even marginally statistically significant, whereas the relationship between home prices and real economic variables is preserved.

In conclusion, our empirical analysis shows that an increase in homeownership rate will not necessarily elicit a reduction of home prices.

Table 14: Proxy for nominal interest rates

Economies	Proxy for nominal interest rate
Austria, Belgium, Cyprus, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain, Germany	Short Term (3-month) Interest Rate
Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Poland, Romania, Sweden, United Kingdom, Singapore, Taiwan, Japan	Short Term (3-month) Interbank Offered Rate
Hong Kong	Short Term (3-month) Interest Settlement Rate
United States	Fed Funds Rate

Source: CEIC.

Table 15. Regression analysis of the effect of homeownership rate on housing price

Dependent variable: Home Price Index (HPI)			
Regressor	(1)	(2)	(3)
Homeownershio Rate (HOR)	0.043 (0.192)	0.150 (0.172)	0.502 (1.644)
Inflation rate	0.713** (0.303)	1.316*** (0.271)	1.330*** (0.293)
GDP growth rate	1.986*** (0.181)	2.054*** (0.247)	2.049*** (0.253)
Nominal Interest rate	0.250 (0.362)	-1.283* (0.662)	-1.273* (0.659)
$(HOR)^2$			-0.002* (0.011)
State effects ?	Yes		
Time effects ?	No	Yes	Yes
N	310		
Year	2004-2015		
F-statistics and p-values testing exclusion of groups of variables			
Time effects = 0		7.3 (0)	7.3 (0)
Inflation rate,GDP growth rate, Nominal interest rate = 0	45.27 (0)	40.8 (0)	40.83 (0)
Adjusted R^2	0.624	0.681	0.679

Note : These regressions were estimated using panel data for 34 countries from 2004 to 2015 (310 observations total), described in the Data Section. Standard errors are given in parentheses under the coefficients and p-values are given in parentheses under the F-statistics. The asterisks denote the statistical significance of each coefficient (* for 10% level, ** for 5% level, and *** for 1% level).

Source: Our Hong Kong Foundation.

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