

**Anatomy of a Housing  
Affordability Crisis:  
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# Anatomy of a Housing Affordability Crisis: Hong Kong, 2001-2021

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## Abstract

This study examines the distributional effects of high housing costs in Hong Kong using disaggregated population data. We document that public housing shielded much of the population from rapidly rising private housing costs between 2006 and 2016. However, as private housing costs rose, public housing became increasingly misallocated. The population of private-sector renters dramatically increased. The prices and rents of smaller private-sector units disproportionately increased. Younger cohorts disproportionately bore the burden of rising housing costs and increasingly became unable to move up the housing ladder. We argue that Hong Kong's housing affordability problem constrains its economic growth and discuss policy remedies.

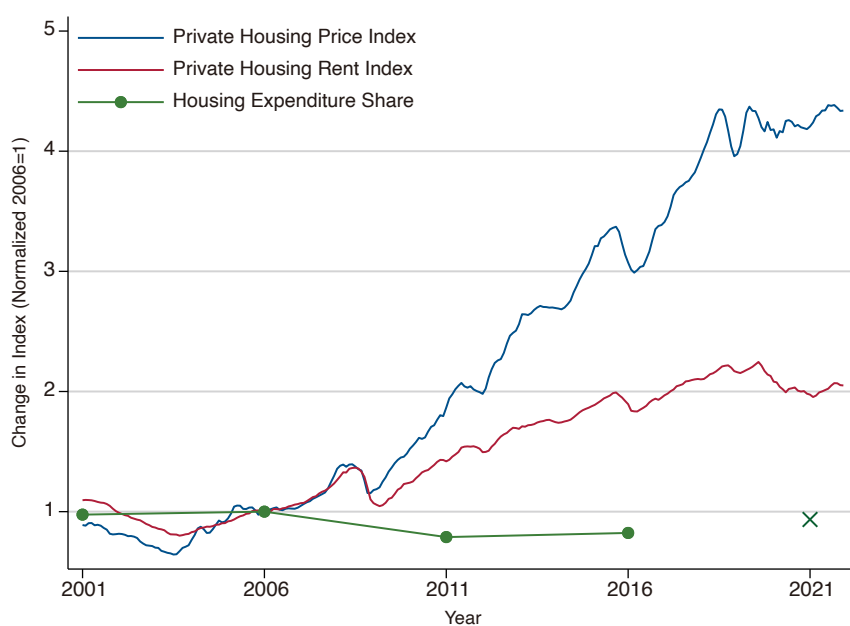
## 1 Introduction

For fourteen years in a row since 2010, Hong Kong has been ranked the least affordable housing market in the world (Demographia 2024). Images of low-income households cramped into tiny subdivided units and inhumane living conditions have earned international notoriety for Hong Kong. The lack of affordable housing options is widely seen as detrimental to society. It not only inflicts hardship on households, but also constrains a city's economic growth (Glaeser and Gyourko 2018; Hsieh and Moretti 2019; Baum-Snow 2023).

In this paper, we measure the distributional effects of Hong Kong's housing affordability crisis by decomposing population, price, and construction data. We focus on the two decades after the repositioning of Hong Kong's housing policy in 2002, which ended aggressive urban development and housing construction. After the policy repositioning, Hong Kong experienced rapid increases in private-sector prices and rents. As shown in Figure 1, Hong Kong's private-sector housing price index increased by 241% and its private-sector rent index increased by 94% between 2006 and 2016.



**Figure 1: Trends in price, rent, and housing expenditure shares, 2001-2021**



Notes: Figure plots the change in private housing price and rent indices and housing expenditure share. The housing expenditure share is calculated as the ratio of equivalised monthly housing expenditure over equivalised monthly household income, where household income is defined as the sum of earnings in cash from all employment and other cash income, and housing expenditure for renters includes basic rent, while housing expenditure for owner-occupiers includes mortgage payment. Because of inconsistent household income definitions, the housing expenditure share in 2021 is not comparable with other waves. Normalized the index in 2006 to one. Source: Rating and Valuation Department; Hong Kong Census Data 2001 - 2021

Our main analysis compares 2006 and 2016, so that our data is not skewed by changes in income definitions in the Population Census data and short-run distortions such as the Covid-19 pandemic. We decompose trends in housing expenditure shares by income, housing tenure, and demographics. We break down changes in housing tenure by income group and age cohort. We disaggregate trends in housing price, rent, and supply by quality segment.

We document that large-scale public housing insulated a large fraction of households from rapidly rising private-sector housing costs. However, as private-sector costs rose, public housing became increasingly misallocated, and the population of private renters dramatically increased. The prices and rents of smaller private-sector units correspondingly increased. These findings suggest that the failure to target housing assistance to needy populations has resulted in skyrocketing housing costs for youths and low-income households outside the public housing system.

Our detailed results are as follows. First, across all income levels, public-sector residents spent a much smaller proportion of their income than their private-sector counterparts. Moreover, a large fraction of middle-income households lived in subsidized public housing. As a result, the relationship between housing expenditure shares and household income exhibits an unusual U-shaped pattern in Hong Kong. In 2006, for example, households in the lowest income decile spent 26% of their

income on housing, while households in the fourth and fifth deciles spent 16%, and those in the highest decile spent 21%.

Second, we document that rising private-sector housing costs did not translate into rising housing expenditure for much of the population. Average housing expenditure as a share of income *fell* from a relatively low 19% in 2006 to an even lower 16% in 2016, even as housing costs skyrocketed. Instead, rising housing costs between 2006 and 2016 in Hong Kong was borne almost entirely by private renters, which accounted for only 11% of the population in 2006. The average housing expenditure share of private renters rose, while that of homeowners and public renters fell. Because private renters only make up a small fraction of households throughout the income distribution, housing expenditure shares fell across income levels.

Third, we find that public housing became increasingly misallocated towards middle-income households between 2006 and 2016. The share of population living as public renters in the middle-income quintile increased by about 4 percentage points. At the same time, the share of public renters in the lowest income quintile fell by more than 5 percentage points.

Fourth, we document that younger age cohorts increasingly lived with parents or rented in the private sector, and are much less likely to become homeowners or public renters.

Fifth, we find that both prices and rents for low-quality housing disproportionately rose, even as the supply of low-quality housing disproportionately increased. These findings are consistent with the rising demand for private rental units in the lower-quality segment. This increase in demand is likely related to the increased misallocation of public housing towards middle-income households.

Finally, we argue that Hong Kong's lack of affordable housing outside the public housing system has significantly hampered the city's economic growth. For this reason, we believe fundamental reform of Hong Kong's housing system is necessary. We discuss specific policy recommendations in the paper's concluding section.

## 2 Background

In this section, we provide background on Hong Kong's housing system. We briefly recount the relevant history of Hong Kong's housing policies, and describe the types of housing available in the city. We also describe the data used for analysis.

### 2.1 A Brief History of Hong Kong's Housing Policy

Hong Kong's public housing system was created in the 1950s to resettle a large refugee population that illegally resided in squatter areas. In the wake of the 1967 riots, Hong Kong's then-Governor Murray MacLehose initiated an aggressive urban development program to redress widespread



discontent regarding housing. This program involved developing rural areas into “New Towns.” It greatly expanded Hong Kong’s Public Rental Housing (PRH) program, which provides subsidized rental housing. The Home Ownership Scheme (HOS), which provides subsidized ownership housing, was also inaugurated.

However, the 1998 Asian Financial Crisis precipitated a deep recession and plummeting property prices in Hong Kong. In response, the Hong Kong Government repositioned its housing policy. Specifically, in 2002, it halted land auctions and suspended the Home Ownership Scheme. Figure 2 Panel (a) shows that new public and private housing construction sharply declined in the early 2000s. For over a decade, construction of subsidized ownership units almost ceased. The average number of new housing units completed between 1997 and 2003 reached 70,900, but fell to an average of 29,300 between 2004 and 2020. It was not until 2017 that construction of new subsidized ownership units restarted.

## 2.2 Hong Kong’s Housing Ladder and Population Trends

Because of its large public housing system, Hong Kong’s property market can be classified into four tenure types: private renters, public renters, public owners, and private owners. The key features of each tenure type are explained below. Tables 1 and 2 provide summary statistics.

**Table 1: Summary Statistics (Renters)**

	2001	2006	2011	2016	2021
<b>A. Public Renter</b>					
Population	2,116,300	2,113,600	2,135,500	2,078,140	2,077,000
As share of a total population	34.4%	33.7%	32.2%	31.7%	31.8%
Number of HHs	630,980	696,820	747,840	762,600	744,120
Share below PRH income limit	55%	56%	62%	61%	61%
Real HH Income	15,916 (11,764)	14,434 (11,801)	14,091 (10,947)	17,026 (13,482)	18,422 (13,855)
Real HH rent	1,425 (665)	1,627 (752)	1,297 (649)	1,400 (735)	1,784 (810)
Average HH size	3.4	3.0	2.9	2.8	2.7
Share with members aged < 15	33.5%	29.6%	23.8%	18.5%	18.0%
Share with members aged > 60	45.2%	42.1%	46.0%	51.3%	60.7%
Share moved in last 5 years	29.7%	29.9%	20.2%	15.9%	14.4%
<b>B. Private Renter</b>					
Population	688,480	647,080	789,860	965,960	926,520
As share of a total population	11.2%	10.3%	11.9%	14.7%	14.2%
Number of HHs	297,560	283,260	331,520	402,080	388,900
Share below PRH income limit	28%	23%	23%	31%	27%
Real HH Income	32,040 (46,899)	37,003 (52,835)	44,868 (58,159)	40,640 (50,389)	39,367 (32,539)
Average HH size	2.5	2.5	2.6	2.6	2.6
Share with members aged < 15	30.6%	30.1%	31.9%	32.0%	29.9%
Share with members aged > 60	16.7%	14.4%	15.6%	18.3%	21.3%
Share moved in last 5 years	75.7%	69.2%	72.5%	65.2%	57.2%

Notes: Table shows the summary statistics of private and public renters respectively, using the 5% sample of the Hong Kong Population Census from 2001 to 2021. Standard deviations are reported in parenthesis.

**Table 2: Summary Statistics (Owners)**

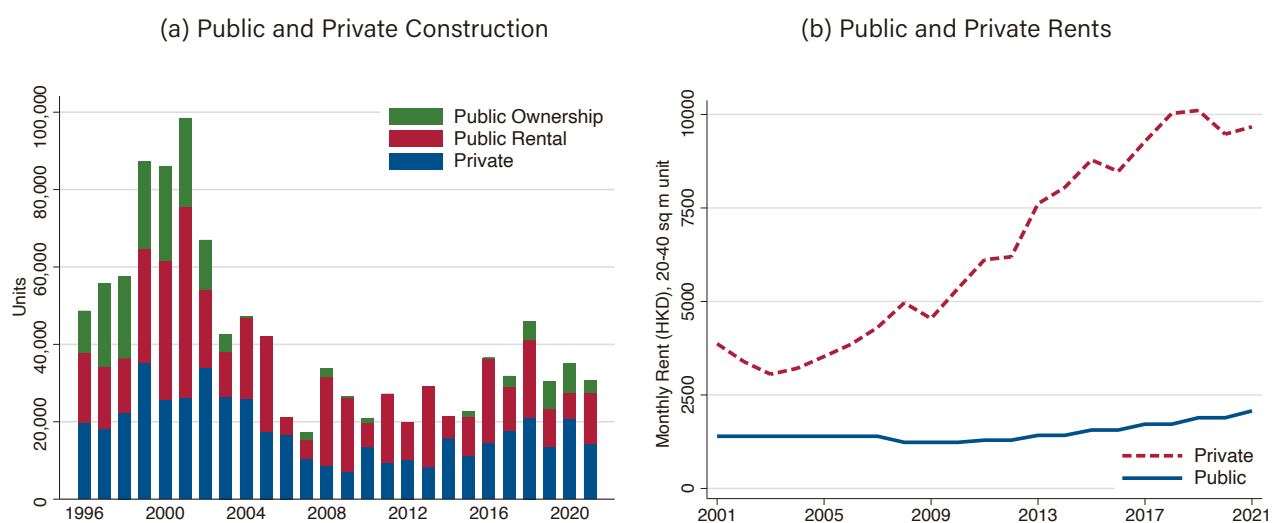
	2001	2006	2011	2016	2021
<b>A. Public Owner</b>					
Population	1,064,760	1,108,820	1,114,700	1,057,500	1,061,360
As share of a total population	17.3%	17.7%	16.8%	16.1%	16.3%
Number of HHs	303,300	334,240	357,340	361,660	372,360
Share below PRH income limit	26%	26%	30%	38%	41%
Real HH Income	25,947	24,538	24,764	26,300	26,248
	(19,120)	(20,532)	(20,350)	(22,204)	(20,629)
Real HH Mortgage	3,818	2,629	1,446	931	1,004
	(4,260)	(3,731)	(2,671)	(2,440)	(2,781)
Average HH size	3.6	3.4	3.2	3.0	2.8
Share with members aged < 15	42.1%	31.0%	21.3%	18.2%	15.6%
Share with members aged > 60	29.2%	32.6%	40.8%	51.3%	65.4%
Share moved in last 5 years	35.1%	8.7%	8.4%	5.1%	7.7%
Share with Zero Mortgage	39.4%	54.0%	69.3%	80.3%	82.0%
<b>B. Private Owner</b>					
Population	2,086,320	2,224,380	2,360,160	2,176,680	2,210,700
As share of a total population	33.9%	35.5%	35.6%	33.2%	33.9%
Number of HHs	704,240	789,300	852,400	798,260	815,900
Share below PRH income limit	23%	22%	25%	28%	27%
Real HH Income	39,145	38,077	41,197	45,389	41,873
	(48,697)	(47,711)	(51,443)	(52,044)	(33,514)
Real HH Mortgage	6,471	5,696	4,149	3,973	4,275
	(10,875)	(10,190)	(8,199)	(7,328)	(7,383)
Average HH size	3.1	3.0	3.0	3.0	2.8
Share with members aged < 15	33.5%	28.9%	25.2%	23.8%	21.9%
Share with members aged > 60	31.3%	29.5%	35.7%	41.0%	49.6%
Share moved in last 5 years	37.2%	29.9%	26.0%	18.7%	17.8%
Share with Zero Mortgage	54.8%	54.7%	58.7%	60.7%	61.0%

Notes: Table shows the summary statistics of private and public owners respectively, using the 5% sample of the Hong Kong Population Census from 2001 to 2021. Standard deviations are reported in parenthesis.

**Public Renters.** Public renters live in subsidized and means-tested PRH units that are owned and operated by the Hong Kong government. These renters accounted for 33.7% of Hong Kong's population in 2006. PRH units, typically 300-400 square feet, are assigned through a first-come, first-serve waiting list system. Applicants must satisfy income and asset tests to receive a PRH unit. Residents are also subject to regular means testing. PRH rents are determined by government policy, which requires residents exceeding certain income thresholds to pay 1.5 times or double the base rent. Nominal rent increases are adjusted according to citywide income growth and capped at a maximum of 10% every 2 years. Figure 2 Panel (b) shows that PRH rents remained stable even as private-sector rents skyrocketed.



**Figure 2: Trends in construction and public-sector rents**



Notes: Panel (a) plots the units of new construction, from 1996 to 2021. Units are divided into three categories: public ownership, public rental and private. Panel (b) plots the rental trends for PRH units and private homes. Private homes are limited to those between 20 and 40 square meters and the private rental indices are weighted by the number of PRH units in each region in 2016 so as to be comparable with the PRH rental indices.

**Public Owners.** Public owners live in government-built ownership units without leasing or resale rights. They accounted for 17.7% of Hong Kong’s population in 2006. A large majority of public owners live in Home Ownership Scheme (HOS) units. The HOS units are typically 500-700 square feet and their selling prices are typically discounted by 35% to 50% from market valuations. They are rationed to eligible buyers using a lottery mechanism. Another subset of public owners lives in Tenant Purchase Scheme (TPS) units – formerly PRH units that were offered to existing tenants at a deep discount between 1998 and 2006.

To earn the right to resell or rent out their units, all public owners are required to reimburse the initial discount at current market rates. We classify TPS and HOS owners as private owners rather than public owners after they repay this discount. Given the hefty financial obligation, repayment is rare. As of 2023, the majority of these owners—more than 77% of HOS owners and 98% of TPS owners—have chosen not to reimburse that discount. Most HOS and TPS owners therefore cannot easily lease or resell their units.

**Private Owners.** Private owners live in units that they can freely sell or lease out. As of 2006, private renters accounted for 35.5% of the population.

**Private Renters.** Private renters are a small fraction of Hong Kong’s population. These households rent from private-sector owners. As of 2006, private renters accounted for only 10.3% of the population.

**Population trends.** Between 1997 and 2019, Hong Kong’s population grew slowly but steadily. Immigration from Mainland China was highly restricted, in part to stabilize political sentiments after Hong Kong’s sovereignty was transferred from Britain to China. Population growth averaged 0.6% per year during 1997-2019. It turned negative after 2019 in the wake of political unrest and the Covid-19 pandemic.

## 2.3 Data

We use data from five waves of the Hong Kong Census/By-Census, covering the years 2001 to 2021. Each wave collects a 5 percent sample of the total population every five years. The Hong Kong census data is the most appropriate resource for our research for two reasons. First, it is the largest micro-level dataset available in Hong Kong, offering comprehensive demographic and income information at both household and individual levels. Second, it includes detailed data on housing tenure types, which allows us to measure income and housing expenditures across different housing tenure groups and assess housing affordability.

For our main analysis, we focus on data from three waves: 2006, 2011, and 2016. We exclude data from before 2006 due to the impact of the Tenants Purchase Scheme, which allowed public renters to buy their homes. We also exclude the 2021 data because the way household income was measured in that wave is not consistent with previous waves.

In the following sections, household income is defined as total monthly cash earnings from employment and other income sources from all household members. Housing expenditure is defined as monthly rent for renters and monthly mortgage payments for homeowners. We exclude renters who reported paying zero rent. To account for household size, both income and housing expenditure are equivalised by dividing the total amount by the number of equivalent adults in the household, and the result is distributed equally among all household members.

## 3 Decomposition of Housing Expenditures

This section examines trends in housing expenditure across the population between 2006 and 2016 using detailed Population Census data.

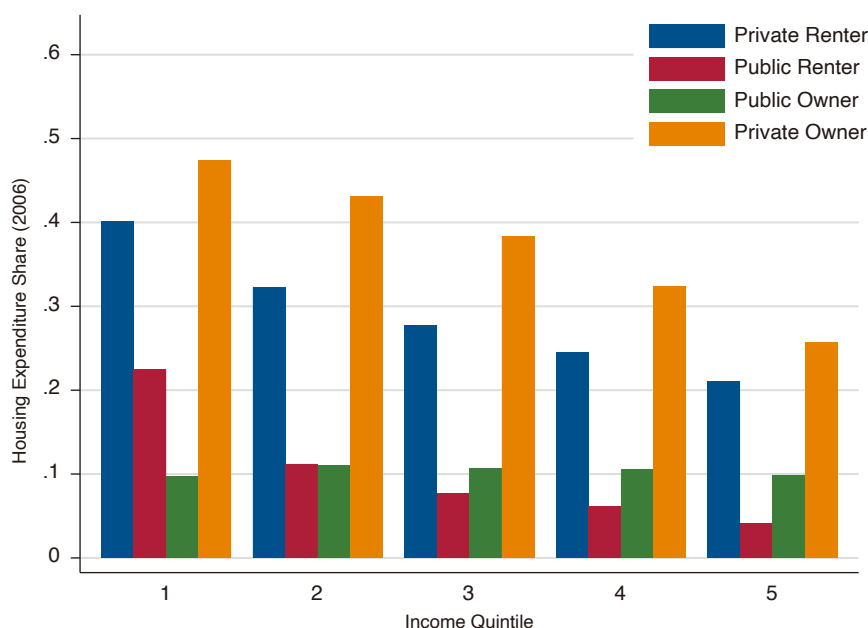
### 3.1 Cross-sectional Patterns in Housing Expenditure

We begin by decomposing housing expenditure shares by household income, housing tenure types, and demographic characteristics in 2006 and 2016, respectively. We find that: (1) the housing expenditure shares of public-sector populations are much lower than private-sector populations; (2) the cross-sectional relationship between housing expenditure share and income in Hong Kong is U-shaped, due to a large segment of middle-income household living in subsidized housing. These findings suggest that the public housing sector in Hong Kong has significantly distorted its housing market.





**Figure 3: Housing expenditure share by income quintile and housing tenure, 2006**



Note: Figure plots the average housing expenditure share by income quintile and housing tenure in 2006. The housing expenditure share is calculated as the ratio of equivalised monthly housing expenditure over equivalised monthly income. Household income is defined as the sum of earnings in cash from all employment and other cash income. Housing expenditure for renters includes basic rent, while housing expenditure for owner-occupiers includes mortgage payment. Income quintiles are defined by the equivalised monthly household income. Units are divided into four housing tenure types: private renters, public renters, public owners, and private owners.

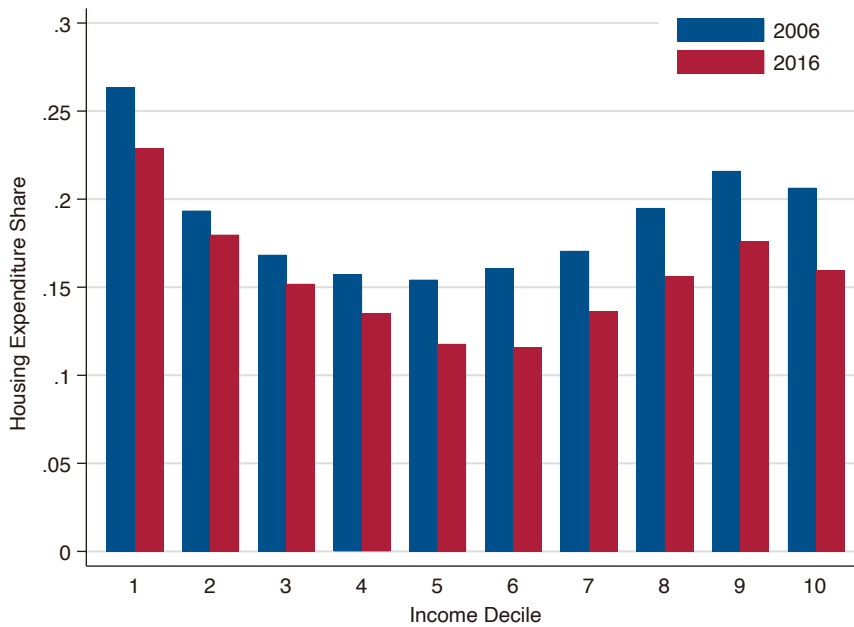
Figure 3 plots housing expenditure shares – defined as the share of income spent on housing expenditure – by household income and housing tenure type in 2006.<sup>1</sup> We find that households living in public housing had a much lower expenditure share than those living in private housing across all income quintiles.

For instance, in the bottom income quintile, public renters spend 22% of their income on rents, while private renters spend 40% of their income on rents. Meanwhile, in the bottom income quintile, public owners spend 10% of their income on housing, and private owners spend 47% of their income on housing. A similar pattern is found throughout the income distribution.

1 Specifically, housing expenditure share is defined as the ratio of monthly adjusted housing expenditure to adjusted household income, where adjustments account for household size and composition.

Within housing tenure types, housing expenditure shares fall with income. Among private renters, the housing expenditure share for households in the bottom income quintile is 40%, but falls to 24% for households in the top income quintile. Among private owners, the housing expenditure share for households in the bottom income quintile is 47%, and falls to 26% for households in the top income quintile. Intriguingly, housing expenditure shares also fall with income among public renters, from 22% in the bottom quintile to 4% in the top quintile. However, housing expenditure shares are similar across the income distribution for public owners, at around 11%.

**Figure 4: Housing expenditure share by income decile, 2006 and 2016**



Note: Figure plots average housing expenditure shares by income decile in 2006 and 2016. The housing expenditure share is calculated as the ratio of equivalised monthly housing expenditure over equivalised monthly income. Household income is defined as the sum of earnings in cash from all employment and other cash income. Housing expenditure for renters includes basic rent, while housing expenditure for owner-occupiers includes mortgage payment. Income deciles are defined by the equivalised monthly household income.



Figure 4 plots the average housing expenditure share in each income decile in 2006 and in 2016. The plot reveals an unusual U-shape relationship: in Hong Kong, the housing expenditure share of middle-income households is much *lower* than that of both high- and low-income households. In 2006, households in the lowest income decile spent, on average, 26% of their income on housing, which is 10 percentage points more than the average for middle-income households. High-income households also had an average housing expenditure share of around 21%. This unusual U-shaped pattern – where both low- and high-income households spend a higher share of their income on housing compared to middle-income households – remains present in 2016. This pattern is unusual because, in most other countries, the share of income spent on housing monotonically decreases as household income rises.<sup>2</sup>

The U-shape relationship between housing expenditure share and income is explained by two facts: (1) higher-income populations are much more likely to reside in the private sector than middle-income populations, and (2) private-sector housing expenditure share is much higher throughout the income distribution. As shown below in Figure 7 in the middle quintile, 38% of households live in public housing. However, in the top quintile, only 2% live in public housing. Moreover, as previously shown in Figure 3, housing expenditure is much higher for private-sector residents.

### **3.2 Trends in Housing Expenditure Shares**

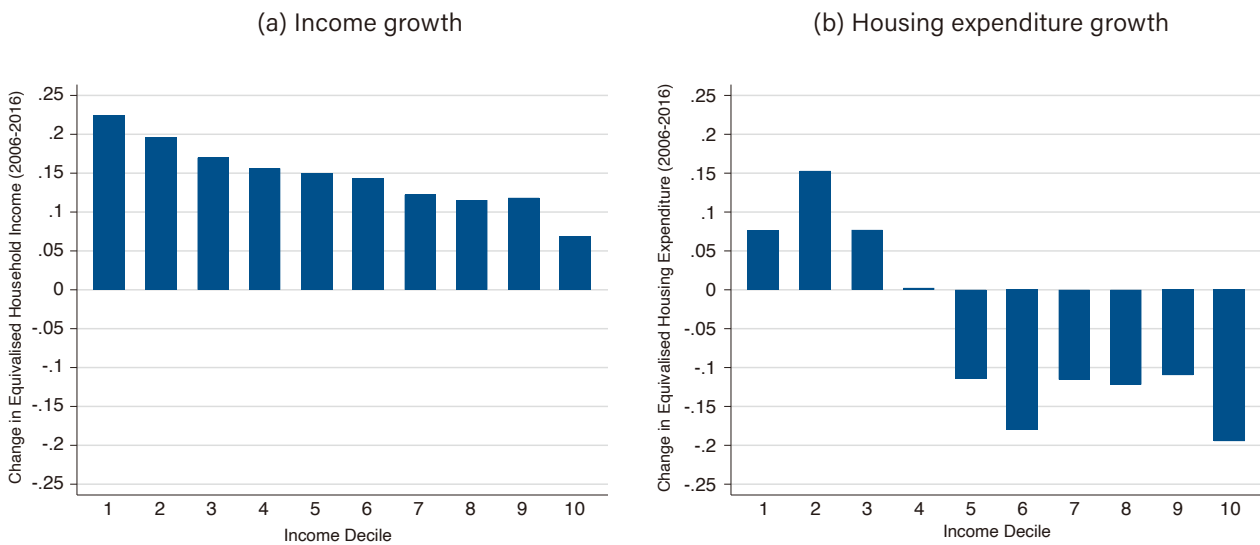
We next decompose the *change* in housing expenditure shares by household income, housing tenure types, and demographic characteristics between 2006 and 2016. Our main findings are: (1) only private renters – which account for a small fraction of the local population – saw large increases in housing expenditures; (2) housing expenditure shares fell in almost all other housing tenure groups. These facts suggest that public housing had helped insulate the vast majority of Hong Kong residents from rising private-sector housing costs.

Figure 4 shows that housing expenditure share decreased in all income deciles from 2006 to 2016. The decline in low-income households is somewhat smaller than that in middle- and high-income households. For instance, the expenditure share in the first income decile fell by roughly 1.5 percentage points. By contrast, the expenditure share in the top two income deciles fell by roughly 4 percentage points.

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2 For example, Figure 7 Panel (a) in Dustmann, Fitzenberger and Zimmermann (2022) shows that the housing expenditure share decreased from 39% in the lowest income quintile to 14% in the highest income quintile in Germany in 2013. Moreover, Figure 1 in Larrimore, Schuetz et al. (2017) shows that the portion of income spent on rent decreased from 56% in the lowest income quintile to 10% in the highest income quintile in the United States in 2015. These figures indicate that housing expenditure share monotonically decreases as income rises, highlighting an atypical pattern in Hong Kong's housing market.

**Figure 5: Changes in income and housing expenditure, by income decile**



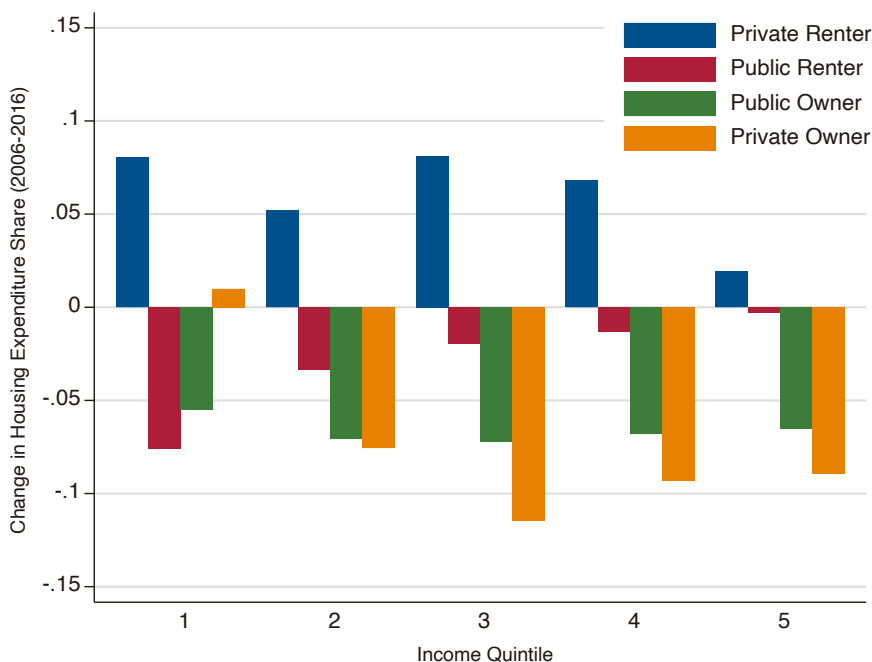
Note: Panel (a) plots the changes in average household income by income deciles. Household income is defined as the sum of earnings in cash from all employment and other cash income. Panel (b) plots the changes in average housing expenditure by income deciles. Housing expenditure for renters includes basic rent, while housing expenditure for owner-occupiers includes mortgage payment. Income deciles are defined by the equivalised monthly household income.

Figure 5 reveals that the uneven decline in housing expenditure share is explained primarily by a large reduction in housing expenditure among higher-income households. Panel (a) shows the changes in real household income between 2006 and 2016 by income decile. We find that incomes rose throughout, and that low-income households saw the largest real income growth. For instance, the average real income in the lowest income decile increased by 22%, while the average real income in the top income decile increased by 7%.

Panel (b) shows the changes in real housing expenditure between 2006 and 2016 by income decile. We find that low-income households experienced an increase in housing expenses during this period, but that housing expenditure fell for higher-income groups. For instance, the average real housing expenditure in the second income decile increased by 15%, while the average real income in the top income decile fell by 19%.



**Figure 6: Change in housing expenditure share by income quintile and housing tenure**



Note: Figure plots the change in housing expenditure share by household income quintile and housing tenure type. The housing expenditure share is calculated as the ratio of equivalised monthly housing expenditure over equivalised monthly income. Household income is defined as the sum of earnings in cash from all employment and other cash income. Housing expenditure for renters includes basic rent, while housing expenditure for owner-occupiers includes mortgage payment. Income quintiles are defined by equivalised monthly household income. Units are divided into four housing tenure types: private renters, public renters, public owners, and private owners. The within-group change is calculated as the ratio of the difference in share between 2006 and 2016 over the 2006 share by each housing tenure type and income quintile.

Figure 6 plots the change in housing expenditure share by income quintile and housing tenure between 2006 and 2016. We find that households living in private rental housing were the only group to see an increase in housing expenditure shares across income levels. Moreover, the increase in housing expenditure shares among private renters is huge. For private renters in the bottom four income quintiles, the housing expenditure share increased by 5-8 percentage points.

By contrast, for public renters, housing expenditure share fell significantly. In the lowest income quintile, the housing expenditure share of public renters decreased by 7.7 percentage points, from 22.5% to 14.8%. In higher income deciles, the decline was smaller, but this is largely attributable to the fact that housing expenditure shares for public renters are already exceedingly low, as previously shown in Figure 3.

Between 2006 and 2016, housing expenditure share dropped significantly for both private and public homeowners – by 9 and 7 percentage points, respectively. As shown below in Figure 7, private and public owners make up roughly 75% of households in the top income quintile. Therefore, the reduction in housing expenditures among owners accounts for 146% of the 4.3 percentage point decline in housing expenditure share within this income group.<sup>3</sup>

## 4 Trends in Housing Tenure

In this section, we decompose the distribution of household tenure between 2006 and 2016 by income and age cohort.

### 4.1 Housing Tenure by Income Group

We first decompose changes in the population's housing tenure distribution by income. We uncover three facts: (1) the share of population living as private renters increased across the income distribution; (2) the share of population living as public renters increased in the middle of the income distribution, but fell in the bottom of the income distribution; (3) these changes were most pronounced among households with children. In other words, public rental housing had become increasingly misallocated to the relatively well-off, to the particular detriment of households with children.

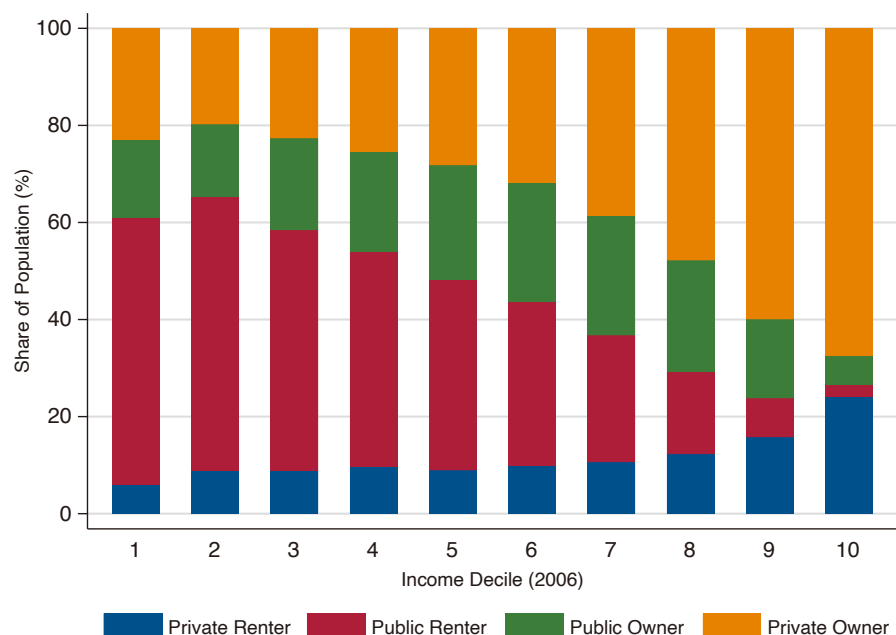
Figure 7 shows Hong Kong's housing tenure distribution by income decile in 2006. As shown in the figure, public renters are primarily households in the lower income deciles. Except for individuals in highest income decile, public owners are evenly distributed across the income distribution. Private ownership shows a positive correlation with income. In the top 10% income decile, 67.5% are private owners. Private renters, while distributed across different income brackets, make up a larger share among high-income groups, which is partially attributable to Hong Kong's population of high-income and high-skilled expatriate workers.

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3 In the top income quintile, the overall housing expenditure share declined by 4.3 percentage points from 2006 to 2016. Among households in this quintile, 75% are owners, whose expenditure share decreased by 8.4 percentage points. Consequently, 146% of the overall decline in housing expenditure share within the top quintile can be attributed to the reduction among private and public owners.



**Figure 7: Housing tenure by income decile, 2006**

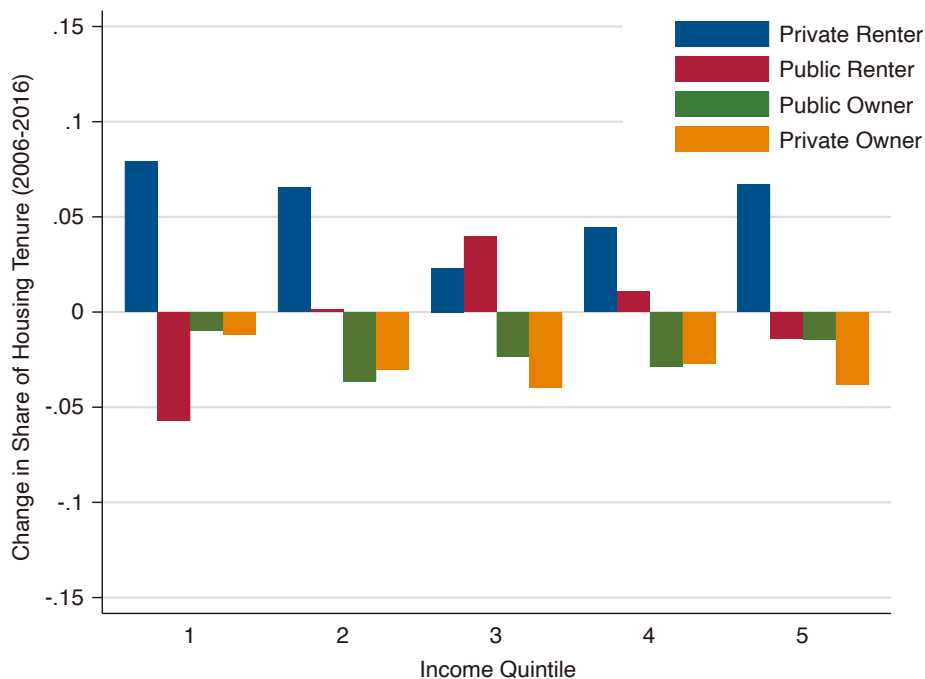


Notes: Figure plots the distribution of housing tenure by household income decile in 2006. Only individuals aged between 20 and 60 are included. For each income decile, the population is grouped into 4 tenure types: private renters, public renters, public owners, and private owners.

Figure 8 plots the changes in the share of population in different housing tenure types for each income quintile between 2006 and 2016. It shows that the share of population living as private renters increased in all income groups. In the bottom two income quintiles, the share of private renters rose by 6-8 percentage points. In the top quintile, the increase is also large, at about 7 percentage points. By contrast, the increase in private-renter share in the middle quintile is smallest, at about 2 percentage points.

While the share of population living as private renters increased, the share of population living as private and public owners fell across the income distribution. In the top four income quintiles, private ownership declined by 3-4 percentage points. In the middle three quintiles, public ownership similarly fell by 3-4 percentage points.

**Figure 8: Change in housing tenure type share by income quintile**



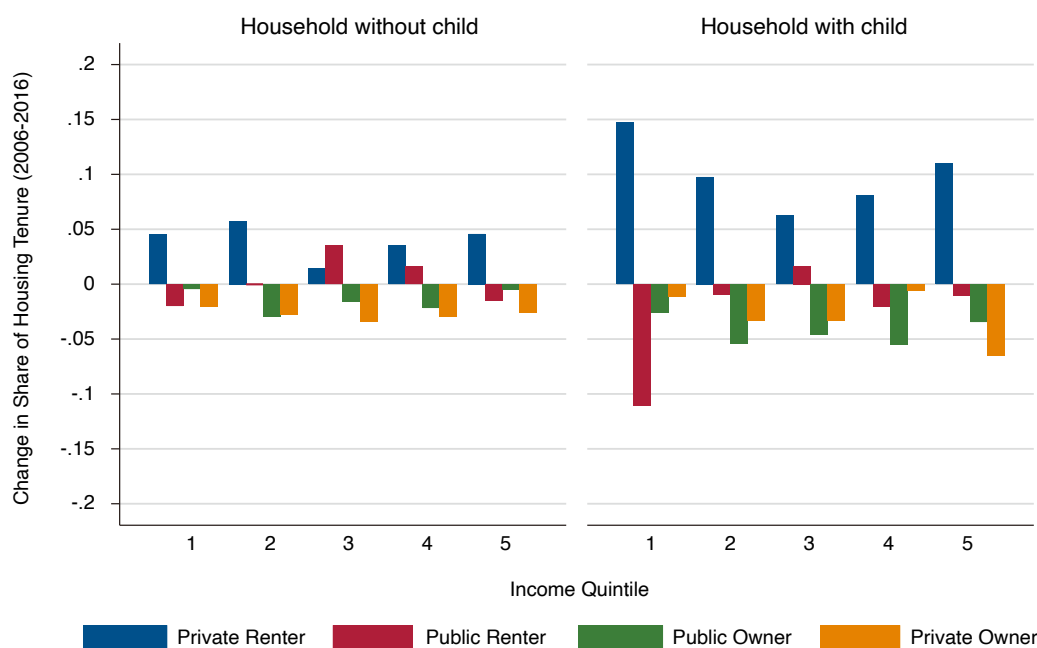
Note: Figure plots the change in housing tenure type share by household income quintile and housing tenure type. The housing tenure type share is defined as the ratio of the population living in each type over the total population by income quintile. Income quintiles are defined by the equalised monthly household income. Units are divided into four housing tenure types: private renters, public renters, public owners, and private owners. The within-group change is calculated as the ratio of the difference in share between 2006 and 2016 over the 2006 share by each income quintile. Households are averaged into five household income quintiles.

Meanwhile, the share of population living as public renters in the middle-income quintile increased by about 4 percentage points. At the same time, the share of public renters in the lowest income quintile fell by more than 5 percentage points. The growing middle-income population and the shrinking low-income population living as public renters suggest that public rental housing, which is meant for low-income populations, was increasingly misallocated to the relatively well-off between 2006 and 2016.





**Figure 9: Change in housing tenure share by income quintile (children)**



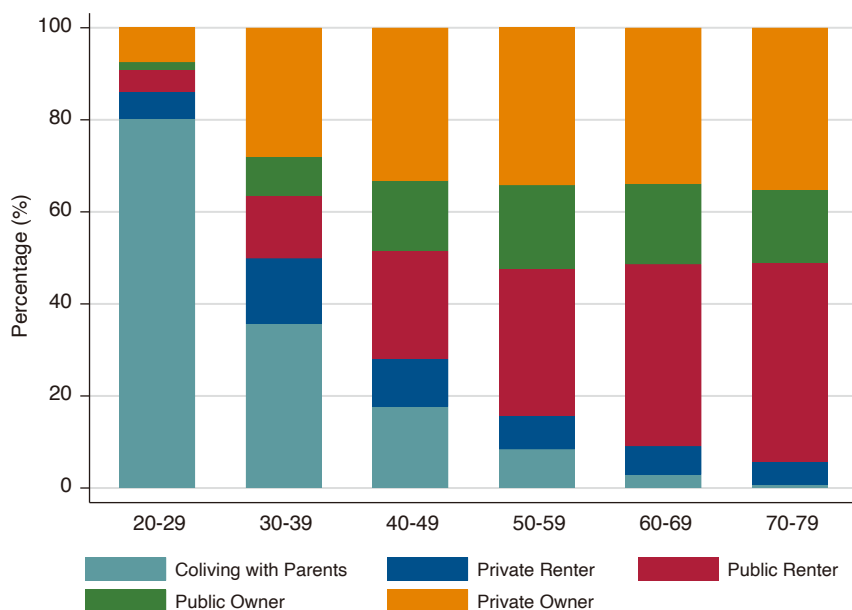
Note: Figure compares the change in housing tenure type share by household income quintile and housing tenure type between households without and with children. The housing tenure type share is defined as the ratio of the population living in each type over the total population by income quintile. Income quintiles are defined by the equivalised monthly household income. Units are divided into four housing tenure types: private renters, public renters, public owners, and private owners. The within-group change is calculated as the ratio of the difference in share between 2006 and 2016 over the 2006 share by each income quintile. Households are averagely grouped into five household income quintiles.

Figure 9 shows that the changes in housing tenure shares are particularly pronounced for households with children (under 15). For instance, among households with children in the bottom income quintile, the share of those living as public renters fell by 11 percentage points, while the share of households living as private renters increased by 15 percentage points. This suggests that the misallocation of public housing was particularly severe for households with children.

#### 4.2 Housing Tenure by Age Cohort

Previously, we found that low-income households with children became disproportionately left out of the public rental sector. We now investigate how the housing tenure distribution has changed by age cohort. We first document housing tenure by age group in 2006. We then document the changes in this distribution between 2006 and 2016. Our main finding is that younger cohorts increasingly live in private rental units and parental homes, without moving up the housing ladder to become owners or public renters.

**Figure 10: Distribution of Housing Tenure Types, by Age Group**



Notes: Figure plots the distribution of housing tenure types in 2006. Only individuals aged between 20 and 79 are included and they are grouped according to their age groups. Private renter, public renter, public owner and private owner exclude members living with their parents.

Figure 10 shows the distribution of housing tenure types by age cohort in 2006. In the figure, individuals who live with their parents are shown as a separate category. We find that, in the 20–29 age group, 80.2% of individuals cohabit with their parents. This number drops to 35.6% for those aged 30–39, and further drops to 17.7% for those aged 40–49.

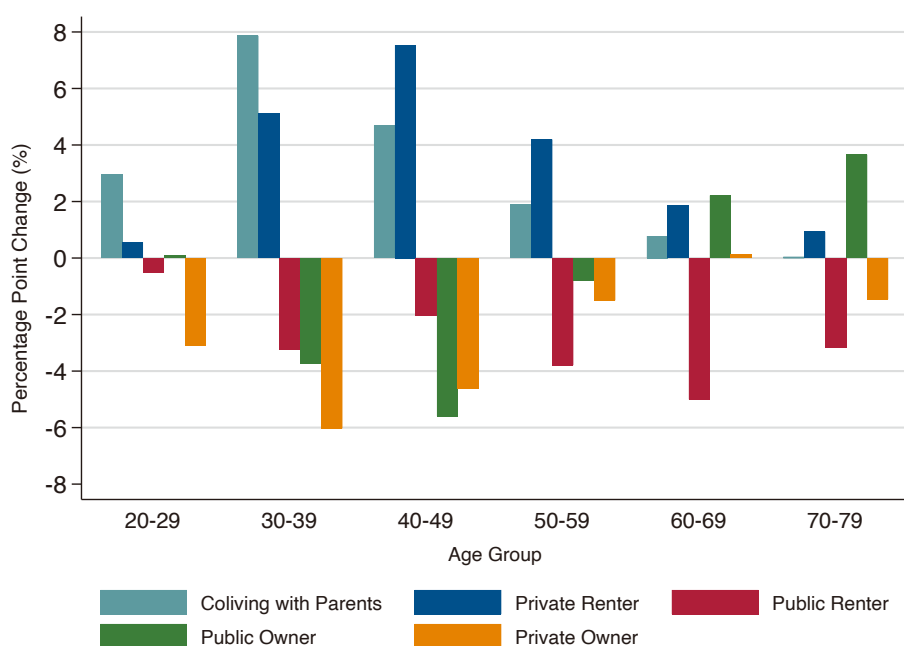
After moving out of cohabitation, individuals are sorted into the other four tenure types. The share of individuals living as private renters is highest among the 30–39 age group before declining with age. In the 30–39 age group, 14.3% of people rent in the private sector. In the 40–49 age group, 10.4% rent in the private sector. In the 50–59 age group, only 7.3% rent in the private sector.

The share of individuals living as owners remains mostly stable after the age of 40. Private owners account for 33.1% of those aged 40–49, 34.2% of those aged 50–59, and 33.9% of those aged 60–69. Public owners make up 15.4% of those aged 40–49, 18.1% of those aged 50–59, and 17.5% of those aged 60–69. These patterns suggest that residents had largely made the decision to buy an ownership unit prior to turning 40.

The share of individuals living as public renters increases with age, however, well into their 70s. For example, public renters constitute 23.4% of individuals aged 40–49, 32.0% of individuals aged 50–59, 39.5% of individuals aged 60–69, and 43.3% among those aged 70–79.



**Figure 11: Change in Housing Tenures by Age Group**



Notes: Figure plots the change in housing tenure between 2006 and 2016. Only individuals aged between 20 and 79 are included and they are sorted according to their age groups. Private renter, public renter, public owner and private owner exclude members living with their parents.

Figure 11 shows the *change* in housing tenure distribution between 2006 and 2016. This figure reveals several facts: First, there has been a marked rise in individuals cohabiting with their parents across all age groups. The increase is largest among those aged 30–39, where the share of people living with parents increased from 35.6% to 43.5%. Among those aged 40–49, that share increased from 17.7% to 22.4%. Among those aged 50–59, that share increased from 8.4% to 10.3%.

Second, the proportion of private renters has increased in all age groups. Among those aged 30–39, the share of people living as private renters increased from 14.3% to 19.4%. Among those aged 40–49, that share increased from 10.4% to 17.9%. Among those aged 50–59, that share increased from 7.3% to 11.5%.

Third, the proportion of public renters has declined in all age groups. Among those aged 30–39, the share of people living as public renters fell from 13.7% to 10.4%. Among those aged 40–49, that share fell from 23.4% to 21.4%. Among those aged 50–59, that share fell from 32.0% to 28.2%.

Fourth, the proportion of owners sharply declined in the 20–49 age groups. Among those aged 20–29, the share of people living as owners fell from 9.2% to 6.2%. Among those aged 30–39, that share fell from 36.4% to 26.7%. Among those aged 40–49, that share fell from 48.5% to 38.3%.

## 5 Private-sector Prices, Rents and Supply: 2006-2016

We previously documented a large increase in the private-renter population, especially among lower-income populations. This increase in the private-sector population may alter prices and supply in the private market. We now examine changes in private-sector prices, rents, and supply by quality segment. Our main finding is that the prices, rents, and supply of low-quality private-sector homes disproportionately increased. This finding is consistent with a disproportionate rise in the demand for low-quality private-sector houses.

### 5.1 Prices and Rents by Quality Segment

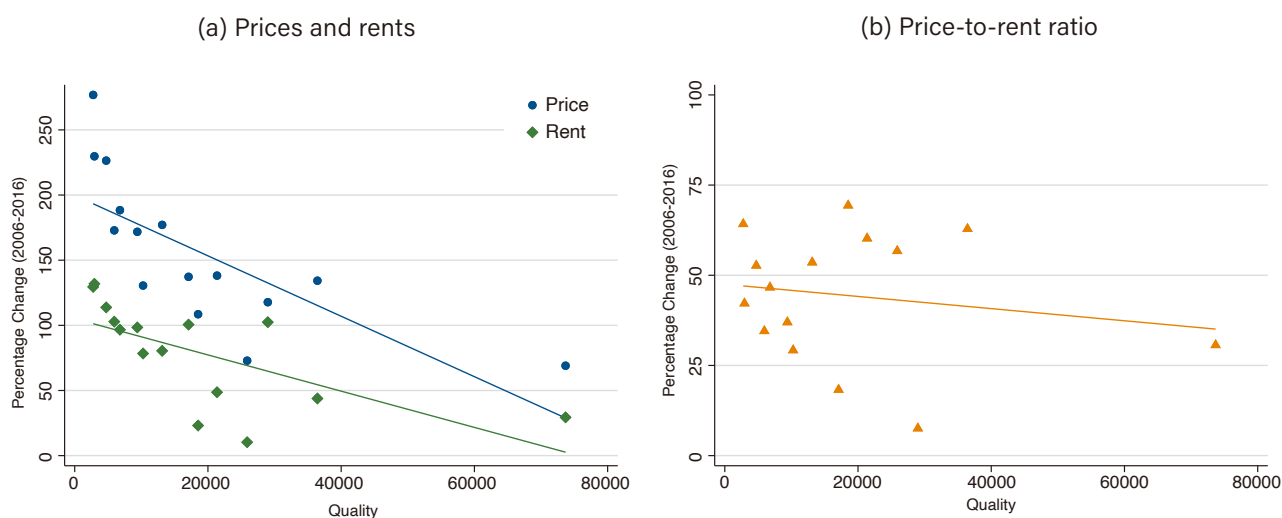
Figure 12 plots changes in prices, rents, and the price-to-rent ratio (P/R ratio) between 2006 and 2016 against housing quality. We measure the change in price and rent using indices for each district and unit size class published by the Hong Kong Rating and Valuation Department (RVD). For each quality segment, we compute a quality index using average private-sector rents by district and unit size in the 2016 Hong Kong Population Census.

Panel (a) shows that prices and rents have increased disproportionately in the lower-quality segments. On Hong Kong Island, for instance, prices and rents for the smallest units (Class A) rose by 226.4% and 113.8% between 2006 and 2016, respectively, compared to 69.0% and 29.4% for the largest units (Class E). The downward-sloping regression line further highlights these disparities, underscoring a clear pattern of uneven growth.

Panel (b) shows that changes in the P/R ratio appear relatively stable across quality segments, as evidenced by the almost horizontal regression line. Differences in the P/R ratio across segments are smaller than those observed for prices and rents. On Hong Kong Island, for example, the P/R ratio increased by 52.7% for the smallest units and by 30.7% for the largest units.



**Figure 12: Change in prices and rents by quality segment**



Notes: Figure plots percentage change in prices, rents and price-to-rent (P/R) ratio between 2006 and 2016 against unit quality. Price and rental indices are observed from RVD data. P/R ratio is computed by the ratio of price index to annual rental index. Each dot represents one quality segment, which is composed of one region and one unit class. Set of regions contains Hong Kong Island, Kowloon and New Territories. There are 5 classes in total, from A to E. The horizontal axis shows the unit quality.

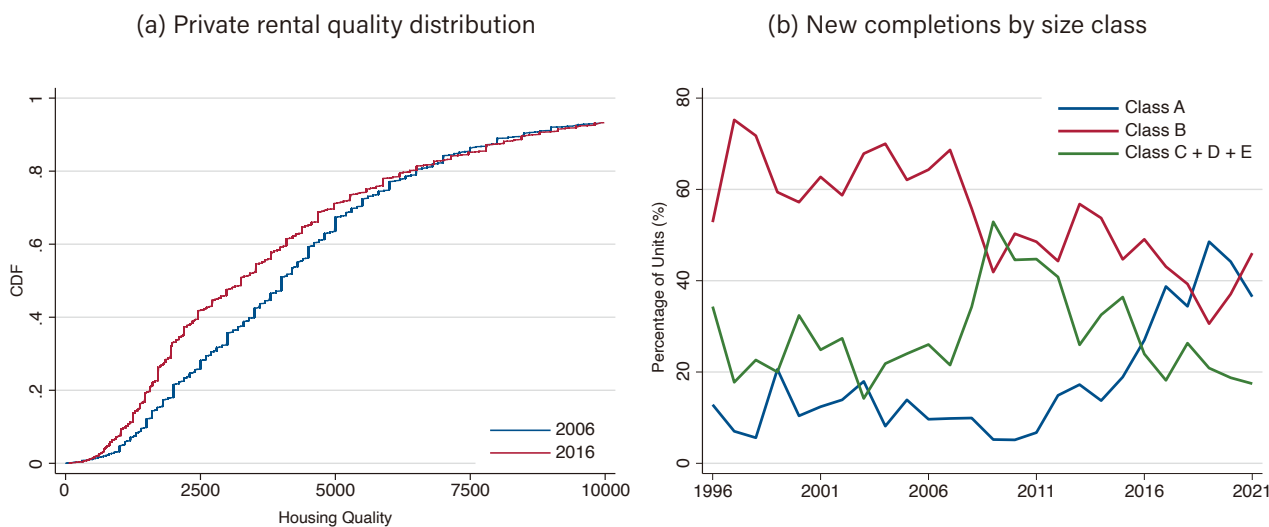
## 5.2 Supply and New Construction by Quality Segment

Figure 13 Panel (a) shows the cumulative distribution function (CDF) of housing quality among Hong Kong's population of private renters between 2006 and 2016. This quality distribution is constructed by combining quality-adjusted rent indices with observed rents in the Population Census.

The figure reveals a leftward shift in the quality distribution. This shift is most prominent in the left tail of the CDF, indicating an increasing prevalence of low-quality units within the private rental market. For instance, the share of private rental housing with a quality index below 5,000 rose from 65.6% in 2006 to 71.2% in 2016, suggesting a decline in overall housing quality.

Figure 13 Panel (b) shows that new construction of smaller units has also grown considerably, especially relative to larger units. New construction of Class B units (40 m<sup>2</sup>–69.9 m<sup>2</sup>) dominated the private market until 2018, when it was surpassed by Class A units (<40 m<sup>2</sup>). Previously, Class A units accounted for only 5% to 20% of new private housing supply, but this figure surged to a peak of 48.5% in 2019. Meanwhile, the share of Class B units fell from a peak of 75.2% in 1997 to 30.6% in 2019.

**Figure 13: Change in quality distribution and new construction**



Notes: Panel (a) plots the cumulative distribution function (CDF) of private rental housing quality in 2006 and 2016. Growth in rental indices amongst different classes between 2006 and 2016 are observed in the RVD data, and household rents in the 2016 Census is used to estimate their rents in 2006 by the relevant growth in the unit class. Note that the class of units is only observable after the 2016 Census. An OLS regression is then used to estimate the linear rent growth equation by considering growth in rent (the dependent variable) and estimated rental value in 2006 (the independent variable). Observed in the 2016 Census, household rents are turned back into 2006's estimated value through the OLS estimated linear rent growth equation. Only households with real household income between \$5,000 and \$45,000 are included. Panel (b) plots the percentage of newly completed units in the private market, categorized by class from 1996 to 2021.

## 6 Policy Implications

This paper studies the origins and consequences of Hong Kong's housing affordability crisis by decomposing population, price, and construction data. We focus on 2006-2016 and find that public housing insulated a large fraction of households from rapidly rising private-sector housing costs. However, public housing also became increasingly misallocated, and the demand for smaller private-sector units disproportionately increased. The result was a dramatic increase in the price of small units, as well as a disproportionate burden borne by young renters, who increasingly lacked the ability to move up Hong Kong's housing ladder.

Hong Kong's housing situation remains similar today. Despite a lull since 2019 and falling prices due to rising interest rates, residential rents in Hong Kong are rising again. From May 2023 to May 2024, the rent index for units smaller than 1,000 sq ft. increased by 5.5%. The public-private rent differential remains very large. Wait times for public rental housing also remain very long, at an average of 5.5 years, compared with an average of 2 years in 2010.



The continuing lack of affordable housing is highly detrimental to Hong Kong's economy. Even though the Hong Kong Government has enacted aggressive schemes to attract talent and investment, their performance has been mediocre at best. Real investment in Hong Kong's machinery, equipment, and intellectual property has fallen from 278 billion HKD (13.7% of GDP) in 2012 to 173 billion HKD (5.8% of GDP) in 2023, despite the enormous sums spent on innovation subsidies. The labor force grew by only 0.4% between May 2023 and May 2024, despite relaxed immigration rules.

Why is Hong Kong struggling to grow its economy? Because the lack of affordable housing is hampering its ability to attract talent and investment. Consider the choices faced by talented immigrants. According to the Urban Land Institute, Singapore's average rent per square meter is 86% of Hong Kong's level. Rents in Beijing, Shanghai, Shenzhen, and Guangzhou are 52%, 44%, 39%, and 27% of Hong Kong's. If rents are significantly cheaper in all of our rival cities, why would talent come? And if there is no talent, why would investments come?

There are three broad policy lessons that one can draw from the above analysis.

First, Hong Kong should reposition its housing policy back towards aggressive urban development – a strategy enacted by Murray MacLehose in the 1970s that laid the foundation for Hong Kong's subsequent prosperity. However, this program was abandoned in 2002 in the wake of the Asian Financial Crisis, directly contributing to the current housing affordability crisis. It is time for Hong Kong to return to its proven development model. Such a program would involve rapidly developing New Towns in the New Territories, rezoning and upgrading its existing housing stock, and reforming its current Town Planning process to remove red tape.

Second, Hong Kong should shift its focus away from constructing low-quality subsidized rentals towards constructing higher-quality ownership housing. The evidence outlined above shows that there is no lack of public rental housing. Instead, public rental housing is grossly mispriced and misallocated. This misallocation has contributed to stratospheric rents for tiny private-sector units, a proliferation of cramped and unsafe coffin homes, and a lack of upward mobility. Therefore, housing policy should instead aim to help middle-income households move up the housing ladder towards ownership.

Third, Hong Kong should reform its public housing system. One useful reform would be to make public sector rents proportional to income, so that subsidies are better targeted towards needy households. Another useful reform would be for the Housing Bureau to relax restrictions on leasing and reselling public-sector units, so that underutilized public-sector units can circulate to needy households.

Several reforms adopted by the Hong Kong Government are steps in the right direction. For example, the Chief Executive's 2024 Policy Address promised to increase the proportion of subsidized sale flats built, tighten the Well-off Tenants Policy, reduce redevelopment red tape, and expedite the development of the Northern Metropolis. These directives are welcome changes.

However, the public has largely failed to recognize that the lack of affordable housing is *the* fundamental malaise plaguing the city's economy. For example, due to pressure from the broader community, Hong Kong responded to falling land prices with a "prudent and paced" approach: significantly reducing land sales. This timid development policy will hurt Hong Kong's long-term competitiveness.

Many in this city are haunted by the 1998 Asian Financial Crisis. They wrongly blame Hong Kong's aggressive urban development program for a deep economic crisis that was foreign and financial in origin. They fail to account for the fact that there is now highly elastic housing demand from skilled migrants to absorb increases in housing supply. Unlike 1998, immigration restrictions are now much looser, the labor market is much tighter, and the wealth of Chinese nationals much greater. Hong Kong also sits next to Shenzhen – China's most youthful, dynamic, and innovative city – whose urban growth is increasingly being limited by land constraints.

There is little doubt that rapid urban development will grow Hong Kong's economy. Like Hong Kong, Shenzhen has been granted special administrative privileges friendly to investment. Unlike Hong Kong, however, Shenzhen has aggressively pursued urban development over the past forty years. Its aggressive program allowed it to attract the best and brightest from around the country. Because of it, Shenzhen rapidly grew from a backwater village to a leading city whose economic production has overtaken Hong Kong's.

To secure its economic future, it is imperative that Hong Kong deepens its housing and development reforms. Deeper reforms are needed to increase the inflow of skilled labor, raise social mobility, attract investment, and bring positivity and business dynamism back. Hong Kong's policymakers should boldly lead these reforms.

