The dynamic of housing market and housing inequality in urban China – a case study in Beijing

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Abstract

With the fastest urbanization process, Chinese cities have experienced extraordinary housing development and marketization, resulting in a significant shift in housing consumption. However, over time, housing inequality has increased significantly, especially among different socio-economic groups. This dissertation used 2017 Chinese General Social Survey data to explore the underlying factors of housing inequality and interaction relationships with other types of inequality (e.g., occupational inequality, income inequality, wealth inequality and intergenerational inequality and so on). The findings suggest that in the current privatized and commodified housing market, socioeconomic status, such as education, gender and age would have a significant effect on housing choice and lead to housing inequalities. Furthermore, this dissertation uses a case study of Beijing to explore the change of underlying causes from a historical perspective. In China, the real estate market experienced three stages, which are socialistic allocation stage (before 1998), privatization stage – market-based housing reform (1999-2008) and housing price booming stage (2009-2021). In the pre-reform era, political status was the primary driver of housing inequality. With the establishment of a privatized and commodified housing market following reform, some political drivers such as political position and work unit have a diminishing impact on housing decisions, whereas hukou remain a lasting effect on housing market. These findings support market transmission theory and power persistence theory, implying that the political system and market mechanism are both influencing the housing market at the same time. These findings point policymakers in the right direction for implementing more targeted measures to promote sustainable development in metropolitan areas.

Content

1. Introduction

Nowadays, urbanization is one of the most transformative trends in the 21st century. It is usually defined as the process of people migrating from rural areas to urban areas, during which cities and towns are formed and expanded (Statista, 2020a). The world's urban population is predicted to roughly double by 2050, according to UN-Habitat projections (New Urban Agenda, 2017). Urbanisation is an engine to achieve sustainable development. The New Urban Agenda sought to integrate and localize the 2030 Agenda for Sustainable Development, as well as meet Sustainable Development Goals (New Urban Agenda, 2017). The United Nations approved the Sustainable Development Goals (SDGs), also known as the Global Goals in 2015, as a universal call to action to eradicate poverty, safeguard the environment, and ensure peace and prosperity for all by 2030 (SDGs, 2015). The 17 SDGs are interconnected, recognizing that actions in one area will affect results in other areas and that development must strike a balance between social, economic, and environmental sustainability (ibid).

In terms of economics, the urban agglomeration offers enterprises more opportunities for specialisation and large-scale production, as well as lower transportation and transaction costs, and provide more working opportunities to attract migrants. Nevertheless, environmental burdens and injustice arise because of economic expansion, with those who suffer the most as a result of larger-scale burdens contributing the least to them. In heavily polluted industrial cities, the poorest residents often live downstream and downwind of the main pollution sources (McGranahan and Satterthwaite, 2014). In addition, lots of social inequalities stand out whilst ongoing urbanisation. Rapid and unplanned urbanization leads to substandard infrastructure, including insufficient housing, water and sanitation, transportation, and healthcare facilities.

Currently, more than 880 million people live in slums in developing countries' cities (Housing at the centre, 2015). These three regions have the most slum dwellers: East and Southeast Asia (370 million), Sub-Saharan Africa (238 million), and Central and South Asia (226 million) (United Nations, 2021). Within a decade, it is anticipated that the struggle to find suitable and affordable housing will affect at least 1.6 billion

people worldwide (Kacyira, 2016). Many of these disadvantaged city dwellers, particularly low-income migrants, are not affordable to obtain houses in the formal market or through public provisioning (McGranahan and Satterthwaite, 2014). They may not be physically evicted from the city, but they will eventually live informally or even illegally in places where private and public ownership rules are lax. This contradicts Goal 11, which calls for cities and human settlements to be 'inclusive, safe, resilient, and sustainable' (SDG, 2015).

As traditional mitigation measures such as social distancing, self-isolation and regular hand washing are impractical and unaffordable in the face of COVID-19, the vulnerability of informal settlements has become more apparent (Osuteye et al., 2020). This is due to overcrowding and limited access to clean water and proper sanitation. Furthermore, because the pandemic has disproportionately affected low-income households and those employed in the informal sector, the amount of slum dwellers has increased, while those whose living conditions are deteriorating have become more vulnerable (United Nation, 2021). However, the recovery from the pandemic provides an opportunity to rethink and redesign cities as hubs of inclusive and sustainable growth. In the face of economic recovery, real estate serves as a major economic pillar industry that has a significant impact on the economy's structure and growth, with housing accounting for 74.7% of household assets in China on average (Jiang, 2014).

There is ample evidence that housing is shaping cities around the world, from slums to gated communities, congestion to sprawl, homelessness to abandoned properties (Kacyira, 2016). Unfortunately, in many situations, this results in fragmentation and inequities. Therefore, it is critical to examine the patterns and dynamics of housing disparity to arouse the attention of society, politics and academia to solve the gaps in our housing market and achieve the goals of inclusive urbanization and sustainable development. The conditions and constraints faced by emerging countries and the situations and challenges faced by developing countries will be reflected in this dissertation from the perspective of China's housing inequality.

There are several reasons to consider China. Firstly, it effectively conveys the significance of government and public policy. The Chinese government continues to deprive migrant workers of the right to the city and deny them access to subsidized housing through the 'hukou' (a household registration system). It discriminates against inner-city migrant workers, excludes them from social benefits including subsidies or housing market purchase rights, and forces them to live in substandard, informal, and illegal dwellings (Huang and Yi, 2015). Second, the urban population in China has soared, with 64% of the Chinese population living in urban areas, compared with 19.4% in 1980 (Statista, 2021a). However, there is a large housing gap and apartment supply doesn't meet the demand for a large influx of migrants from 2009 to 2019, as shown in Figure 1 (Statista, 2020b). In 2019, about 6.45 million new apartments were built in China, while the urban population expanded by 17.06 million (Statista, 2021b).

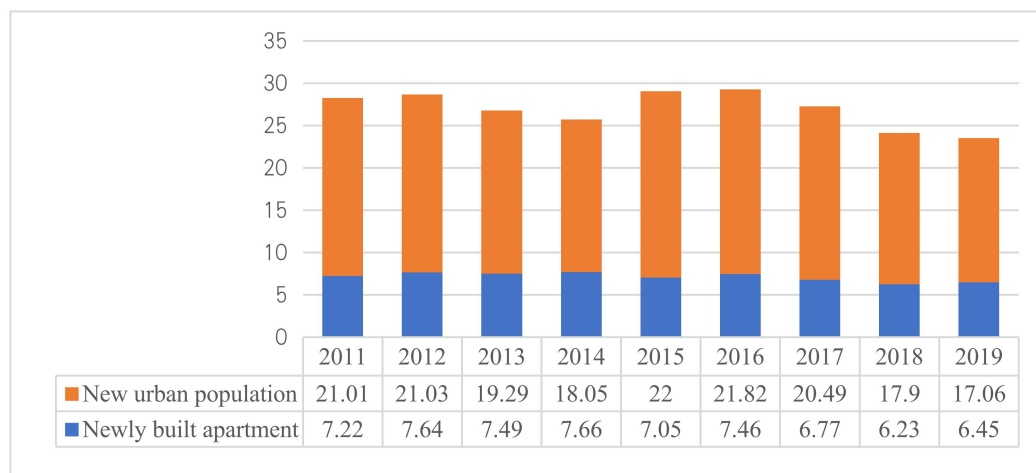|	2011	2012	2013	2014	2015	2016	2017	2018	2019
■ New urban population	21.01	21.03	19.29	18.05	22	21.82	20.49	17.9	17.06
■ Newly built apartment	7.22	7.64	7.49	7.66	7.05	7.46	6.77	6.23	6.45

Figure 1 Comparison between newly built apartment (million accommodation units) and new urban population (million habitants) (source: Statista, 2020b; Statista, 2021b; calculated by author)

Furthermore, Beijing will be used as a case study in this research for the following reasons. First and foremost, Beijing, as the capital city, can more immediately reflect national policies. Second, as indicated in Figure 2, Beijing's urbanization process is highly considerable, ranking second, slightly behind Shanghai. It takes in a high number of migrants and some prominent housing inequalities have happened between migrants and local people.
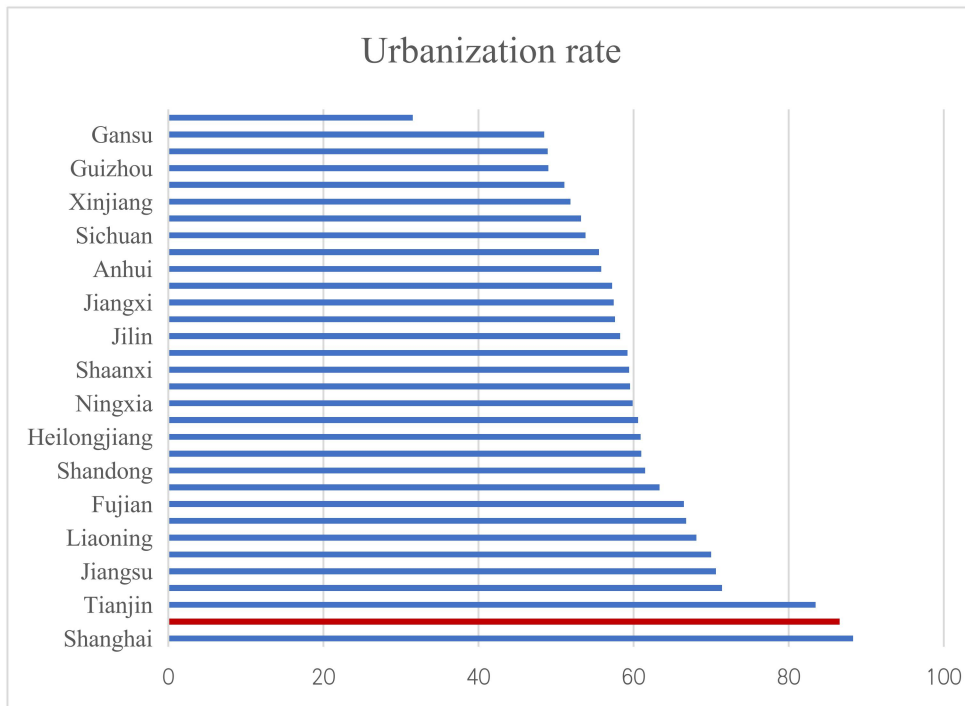
Figure 2 Urbanization rate in China 2019, by region (source: Statista 2020a)

In the following context, this dissertation will be organised as follow: firstly, introduce the definition of inequality and different dimensions of housing inequality in the scope of the world, and then discuss history of housing reform as well as review literature on housing inequality in China. Next, a theoretical and analytical framework will be developed to understand housing inequality in Beijing. Then, introduce the methodology and analyse two certain types of housing inequalities by doing regression analysis. In the following section, discuss the findings and show case study of Beijing. Then discuss social implications of housing inequality. Finally, this essay will end with future development of real estate industry in China and conclusion.

2. Literature review

2.1 Definition and patterns of housing inequality

2.1.1 What does house inequality mean

The concept of inequality is interpreted differently by academics. Ratcliffe (1999) believed that (in)equality can be linked to goals, modes/degrees of access, and outcomes. In terms of access, the ability to obtain one urban 'good' (e.g., high-quality housing) is highly influenced by degrees of access to, and 'achievement' in other institutional areas (especially education and employment).

According to Blackburn (2008), equality and inequality are not opposed; equality is just the 0 point on the infinite scale of inequality depicted in Figure 3. Assume that the X point represents the current amount of inequality in the housing market, and that the population's overall goal is to reduce the level of inequality. Because there are many different types of housing inequalities, the total reduction of housing inequality must begin with a variety of factors such as property rights, living conditions, and so on. Second, housing inequality does not exist in isolation; it interacts with other forms of inequality to generate the current housing market situation.

0 ⟶ **∞**

Equality   **X**   Inequality

Figure 3 Equality and inequality (Blackburn, 2008)

Ge et al., (2019) summarized four categories of inequality, including economic inequality, social inequality, health inequality, and cultural inequality. 'Economic inequality' refers to disparities in income, wealth, and credit. Many studies on housing inequity reveal that family economic status have a significant impact on home acquisition. 'Social inequality' is the situation in which people have unequal access to valuable resources, services, and social positions (Blackburn, 2008). In China, hukou has resulted in unequal access to the housing market for migrants and locals. 'Health inequality' means variations in health caused by age or other variables such as living in substandard settlements. According to Filandri and Olagnero (2014), the housing gap has a negative impact on physical and mental health. 'Cultural inequality' refers to intangible inequality arising from social identities, beliefs, and customs (Ge et al., 2019). In the literature on housing inequality, 'race and ethnicity' are most closely related to the fourth dimension of inequality. The following will describe different patterns of housing inequality.

2.1.2 Dimensions of housing inequality

Housing inequality is usually divided into two components in existing research: household-level and spatial inequality. The former refers to disparities in housing

adequacy based on household economic position or ethnicity, whereas the latter is concerned with unequal access to suitable housing based on living location.

- Household-level inequality

Homeownership: In the US and other Western countries, most research on housing inequality focuses on homeownership or home equity (Aizawa, Helble, and Lee, 2020).

For the underlying forces of differences in homeownership, the literature focuses on different aspect. For example, DeSilva and Elmelech (2012), discovered that homeownership in the US remained unequal across racial and ethnicity and be formed by different factors. The homeownership inequality between Asians and whites, is largely explained by disparities in immigration and residential space patterns, but the disadvantage faced by blacks and Puerto Ricans are due to socioeconomic, demographic factors. While other researchers are interested in the relationship between homeownership and social class, Filandri and Olagnero (2014) discovered that in all countries, households of higher social strata are more likely to own houses with a higher standard of living. Homeownership also relates to intergenerational transfer of wealth. Coulter (2016) uses local transaction house price data in England and Wales to show that as house prices rise, parents' socio-economic advantages will affect the difference in homeownership among young people. In relation to income, the homeownership rate for low-income households (less than $25,000 per year) is 46%, whereas it is approximately twice as high for upper-income households (over $132,000) at 84% (Barclays, 2020). This arises concern for housing inadequacy facing by low-income families.

Housing adequacy: According to Aizawa, Helble and Lee (2020), in both emerging Asia and the United States, low-income families are more likely to experience housing insufficiency, especially in megacities. Norris and Shiels (2007) pointed out that the privatization of former state-owned housing and poor housing output have exacerbated housing shortage for vulnerable people, because housing is directed toward people who can afford it in the market-dominant model, with social housing relegated to a remaining role. According to Drudy and Punch (2002), the Irish housing system is a wealth generator for the wealthy, while the poorer confront increasing affordability issues or are evicted from housing altogether. The Irish

housing system and the market-driven policies and state supports which underpin it are inequitable. In South Africa, impoverished women's rights to decent housing are being eroded, and they are particularly vulnerable to eviction due to gender-based violence (McLean and Chenwi, 2009).

- Spatial inequality

Turning to research on spatial inequality, the hottest topic is urban and rural inequality, which appears to exist in all countries. As said before, residents in centre cities have less access to adequate housing than suburb residents in both Asia and the United States, but for different reasons. The economic disadvantage in rural areas is determined to be a major cause of the urban-rural housing divide in Asian developing countries (Aizawa, Helble, and Lee, 2020). In the United States, however, are primarily influenced by other factors including income disparity and housing market conditions within a given urban area (ibid). In contrast, Wang et al. (2020a), indicating that the inequality of housing wealth in rural is higher than that in cities in China. Because the heterogeneity of rural areas is greater than that of urban areas and the development of informal housing in rural regions is highly unequal. Within cities, there are also housing spatial inequalities. Low-income housing communities are frequently placed too far from livelihood opportunities, with poor infrastructure, transportation, and other amenities (Housing at the centre, 2015). Huang and Yi (2005) discussed that 'immigrant enclaves' were pushed to urban periphery - horizontally away from the city centre or vertically away from the ground, consisting of informal housing in poor conditions.

2.2 Housing inequalities in China context
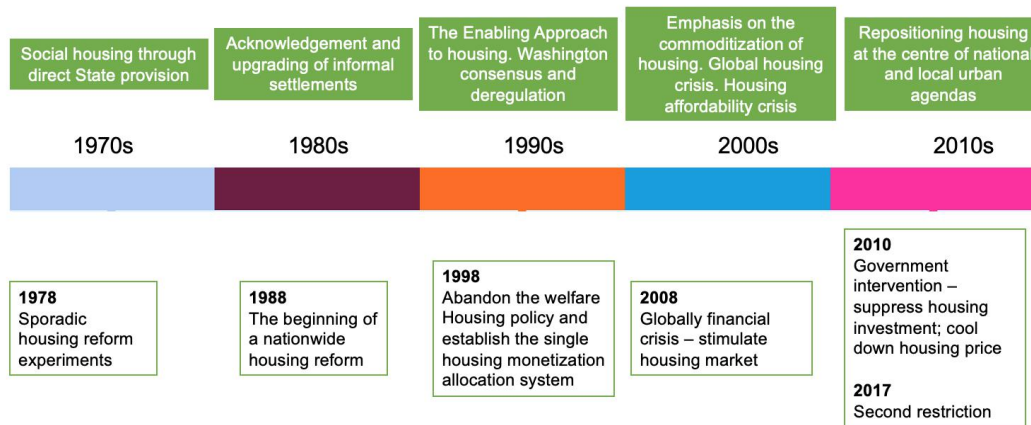
Figure 4 Milestones in Global housing agenda (Source: Unhabitat, 2015) and China's housing reform (Source: created by author)

In the 1970s and before, housing as welfare good was mainly allocated by local governments or work units for free or low-rent houses without ownership (Tan, Wang and Cheng, 2016; Fang and Iceland, 2018). After established the People's Republic of China was established in 1949 (Milestones: 1945–1952), the Communist Party used danwei to reconstruct cities and manage urban society to achieve production objectives. Danwei is a term that refers to state-owned businesses, as well as state-run institutions and agencies (Wu, 1996). The central state delegated power to the danwei to carry out political reform and meet functional demands (Cartier, 2006), in which the workplace functions as an extension of the state apparatus, organizing and controlling social life (Wu, 1996). At that time work units offered not only jobs and income but also a wide range of goods and services (Fang, Liu and Chen, 2020), and danwei usually got priority in resource allocations (Lin and Bian 1991; Cartier, 2006; Fang and Iceland, 2018). Within Danwei, public housing was distributed based on a variety of non-monetary criteria, including job position, technical title, seniority, household size and marital status, with public rental being the most common tenure. (Huang and Jiang, 2009; Logan et al., 1999; Li and Fan, 2020).

At the end of the 1970s, China began to reform the housing system, and the main housing supply gradually shifted from the state to the market, to solve severe housing shortage problems arise from soaring population influx accompanying by urbanisation process (Jiang, 2006), and strengthen the role of the real estate industry and

effectively promote national economic development (Li and Fan, 2020). The central government has actively supported the selling of existing public-sector homes to current renters since 1978. (Yang and Shen, 2008). In 1988, the Chinese government began a nationwide housing reform that has resulted in significant changes in the supply and consumption of houses in Chinese cities (Huang and Jiang, 2009).

From the world perspective, the enabling approach and the Washington Consensus both directed housing market deregulation in the 1990s around the world. The enabling approach shifts the government's role from a single provider to facilitator of housing markets and partnerships (Ghada, 2011), and the Washington Consensus advocated liberalizing the domestic market through privatization and deregulation (Gore, 2020). Correspond, the Chinese government abolished the welfare housing scheme in 1998 and used the real estate industry as a new engine of economic growth in reaction to the negative effects of the 1997 Asian financial crisis (Liu and Wei, n.d.).   China's housing reform has taken two paths: privatization of public housing and the formation of a new private housing market (Logan et al. 2010; Sato, 2006; Huang and Jiang, 2009; Fang and Iceland, 2018). On the one hand, it allows independent construction of private houses or the government to grant preferential loans, including encouraging foreign investment and real estate companies to develop houses into commodities, and new houses are traded in accordance with market rules; on the other hand, public houses were sold to people living in houses at affordable discount prices (Li and Fan, 2020; Fang and Iceland, 2018).

In the 2000s, the commodification of housing was reinforced. After the subprime mortgage market in the United States collapsed in 2008, the financial crisis erupted, affecting people all over the world. The Chinese government announced a 4 trillion RMB stimulus package to boost economic growth, with a large portion of the money going to the real estate sector, which is thought to be the starting point for rising housing prices and creating bubbles (Zhang et al, 2017). Asset bubble emerged when investors have a positive expectation for the future price of an asset, even though the predicted price may not be supported by its fundamentals (Stiglitz, 1990). Since then, real estate investment has grown in importance as a tool for Chinese households to

increase their wealth, as well as a key indicator of wealth differentiation and economic stratification (Li and Fan, 2018).

In the 2010s, the house was repositioned at the centre of the urban agenda with the goal of shifting the focus from simply building houses to a holistic framework for housing development that is coordinated with urban planning practice and prioritizes people and human rights in urban sustainable development (Housing at the centre, 2015). In China, for sustainable healthy development in housing market, the central government began implementing the most restrictive policy to cool down the overheating home price in 2010 to meet more people's housing needs, see Appendix A (Zhang et al, 2017). However, the policy restriction only suppresses housing prices in short term. With continuous speculation investment in housing market, housing sales in China totalled 13.37 trillion RMB, accounting for 16.4% of the country's GDP in 2017, (Liu and Xiong, n.d.). At the time, President Xi Jinping claimed a new principle for Chinese housing policy in the 19th National Congress of the Chinese Communist Party - 'Housing is for living, not for speculation.', strengthening the affordability of housing (Wu et al, 2020). From the welfare allocation stage to marketization, the housing market changed from political domination to a free-market mechanism. The drivers of housing inequality would change consequently. In the next section, I will introduce the popular market transition debates in income and housing inequality literature with three theories shown below.

2.2.2 Market Transition & Power Conversion & Power Persistence Theory
With the market transformation and the development of the national market economy, the power of the socialist hierarchy in shaping the pattern of inequality has faded, or whether it still plays a huge role is a hot discussion. Some researchers believe that market-oriented reforms have weakened redistribution efforts and changed the structure of opportunity (Nee 1989). However, others believe that previous institutional arrangements, including the work-unit system in countries with market transitions, have had a lasting impact on the patterns and nature of inequality. (Bian and Logan, 1996; Rona-Tas 1994).

Szelenyi (1978) proposed that market reforms will lead to a reduction in inequality, emphasizing the reduction of political privileges. Nee (1989) established a 'market transition' model based on Szelenyi and argued that because 'power transfer favours direct producers rather than redistributors', inequalities based on position in the redistribution system would gradually diminish. In other words, Redistributors no longer have a monopoly on power; instead, power in the economy and society is becoming increasingly distributed (Nee, 1991).

Another view is that political position itself provides a sustained advantage in market transactions. Rona-Tas (1994) summed it up as the 'power conversion' thesis, which asserted that transition ex-communist cadres keep their privileged position and perform particularly well in the more active corporate segment. They succeed because human capital is crucial in both capitalism and socialism, and the cadres can transform political influence into economic benefit (Rona-Tas, 1994). In terms of political capital conversion, Nee (1991) and Rona-Tas (1994) stated that party members and cadres had distinct advantages in private sector activities, either because their technical skills (for Nee) are better or because of their informal networks (for Rona-Tas).

Bian and Logan (1996) also believed that during the reform period, China's two fundamental political institutions, the Communist party, and the work unit, continued to have a substantial impact on the urban stratification structure. Furthermore, Bian and Logan (1996) argue that political privilege is deeply rooted in the economic situation, and market coordination is grafted onto bureaucratic coordination rather than replacing it. — the 'power persistence' thesis.

In this dissertation, I hypothesize that the market transition theory is leading to current housing inequalities that socioeconomic factors play an important role in forming housing inequalities and hukou as a deep-rooted registration system still have its influence on obtaining housing and related welfare.

Moreover, housing inequality is not existing alone in urban society but interacted with other types of inequalities. In the next section, other types of inequalities and their relationship with housing inequalities will be discussed.

3. Theoretical and Analytical framework

It's worth noting that the term 'inequality' usually applies to concepts that are not inequality per se. For example, when we talk about gender or radical inequality, we are referring to differences related to inequality such as income, status; we do not have measures of inherent inequality between men and women or British and Dutch. Therefore, the social basis of inequality can be both cause and consequence of inequality (Blackburn, 2008). Accordingly, in this dissertation, I suppose there are five causes inequalities and four consequences inequality for housing inequality, as shown in Figure 5 and the reasons are as follows.

● Causes

Occupational inequality may be the most basic element of inequality in today's industrialized economies. Unlike race and gender, which are the biological root causes of inequality in society, while occupation is the core of the social structure (Blackburn, 2008). Due to different requirements for qualifications, skills, education, and experience, they form an unequal structure. The corresponding drivers could be working unit differences. In the socialist housing distribution stage, housing inequality between families is usually due to different political status and work units (Logan et al., 2010). Furthermore, according to the power conversion theory, even after years of housing reform, individuals with a higher political status and those who work in resource-rich units continue to benefit from housing subsidies, and they are more likely to own houses and consume larger and better houses (Huang and Jiang, 2009).

Access inequality: Inequality in resources is the main feature of social and economic differences between and within countries. In China, Hukou is an obstacle for migrant workers to enjoy public housing. Hukou differentiate the urban population into 4 categories: residents with non-agricultural (local urban residents), local residents with agricultural hukou (suburban farmers), migrants with non-agricultural hukou registered elsewhere (urban migrants), and migrants with agricultural registered

elsewhere (rural immigrants) (Huang and Jiang, 2009). Long-term subsidized public housing is only available to residents with local non-agricultural hukou (ibid). Immigrants are excluded from the subsidized housing system until 2011 when eligible immigrants were permitted to enter 'public rental housing' (gonggongzulin fang) (BCOHURD, 2011). However, they still cannot obtain some commercial housing, especially those that are subsidized, such as 'economically affordable housing' (jingji shiyong fang) (Huang Hejiang, 2009). In the absence of housing subsidies, migrant workers often live-in poor environments to save rent.

Income inequality: In a competitive housing market, increased income inequality leads to more houses held by high-income groups. According to Zhang, Jia, and Wang (2016), income inequality is a major factor driving up both housing prices and the housing vacancy rate. The wealthy acquire properties as an investment rather than for living per se. With the continued speculation in housing market, the house price increase constantly and make homeowners better with non-owners worse off, which in verse would exacerbate the wealth inequality between homeownership and non-homeownership. In particular, Zhang, Jia, and Wang (2016) found that a higher GINI coefficient is linked to increasing in the housing vacancy rate and the housing price-to-income ratio, using data from China's Urban Household Survey. Between 2002 and 2009, the housing price-to-income ratio increased by 6%, and the housing vacancy rate increased by 10%, which can be attributed to the increase in the Gini coefficient. Matlack and Vigdor (2008) used US data to find that the relationship between income inequality and housing affordability is negative for partially balanced low-income households.

Educational inequality: can be both a cause and a result of housing inequality, as seen in Figure 5. Educational inequality and housing inequality are linked by a double-sided arrow in Figure 5. Firstly, education has an indirect effect on housing inequality via income distribution. Candidates with a higher educational level are more likely to land a job with good pay. High-income individuals would segregate themselves geographically in high-priced neighbourhoods, with schools that cater to their specific needs (Gingrich and Ansell, 2014). Academic performance is always higher in districts with higher property costs. Therefore, increasing housing

prices allow affluent people to 'target' schooling in ways that exclude lower-income people. This means that education can be regarded as a kind of 'club good'. Although it is public funding, it also brings a lot of private benefits. Therefore, the factors that determine the way of living and access to specific 'club goods', such as housing costs, will fundamentally determine who receives what kind of education.

Gender inequality: Income gaps between men and women are well-documented. For example, Smith (1990) found that almost half of the annual income of single male workers is the average annual income of single men, and only about one-third of single women reach this income level. Discrimination against women lowers their incomes and has an indirect impact on home purchases. Furthermore, many Chinese men would purchase a home to improve their status in the marriage market and raise their chances of finding a more acceptable partner (Zhao, 2016). Husbands normally provide homes for their future wives, while the lady will usually pay a dowry, either in cash or in the form of a car purchase. However, the car is always depreciating, whereas the house is appreciating. Once the husband-and-wife divorce, the house will be awarded to the man as the man's pre-marital property. Therefore, this dissertation assumes that women will be disadvantaged in the housing market compared to men.

Finally, the corresponding driving factors leading to housing inequality are work unit status, hukou, income per capita, level of education and gender, as shown in Figure 5. Similar to the literature, I classify these driving factors into different theories to find out whether the political factors or market mechanisms have a greater impact on housing inequality. In addition, this research also includes many other structural drivers that may directly or indirectly affect the housing market, such as political status, urban or rural residence, age, ethnicity, and household size.

● Consequences

Health and life expectancy are severely affected by housing inequality. Norris and Shiels (2007) show that worse housing quality has a significant negative impact on the inhabitants' quality of life, as well as morbidity and life expectancy in extreme cases in 8 former communist Central and Eastern European countries. The health problems of homeowners and non-homeowners vary to some extent, but in practically

every civilization, those who live in better-maintained homes live longer. The quality of where individuals live varies, both in terms of housing and the neighbourhood in which it is located. Neighbourhoods are usually considered to be related to social class or status (Warner, 2001).

Intergenerational inequality: There is a two-way influence between housing inequality and intergenerational inequality. On the one hand, the intergenerational transfer of housing assets has become an important mechanism for the reproduction of housing inequality. Elite parents are more likely to transfer assets to their kids, preventing them from changing their relative housing position (Zhu, 2018). For example, the division of local and migrants on housing tenure is an important determinant of intergenerational housing outcomes (Cui, Huang, and Wang, 2020). Residents born in Beijing or Shanghai are in a better position to become homeowners than migrants are.

Rapidly rising house prices, on the other hand, have prevented the younger generation from entering the housing market. Family background has evolved into a crucial factor affecting housing results in China after three decades of marketization. According to Polanyi (1957), there are three factors (state, market and family) that influence young generation to buy houses. The state withdraws from housing supply, and the market does not have enough time to accumulate wealth. The young folks heavily rely on their families' help in gaining homeownership. Family resources could help the younger generation achieve homeownership not just directly transmit wealth, but also indirectly support the younger generation through the intergenerational transmission of socio-economic characteristics (Cui, Huang, Wang, 2020). Though the results show that the direct influence of parents' homeownership is prominent, whereas the impact of transmitted socioeconomic status is limited.

Wealth inequality: With prices skyrocketing in recent years, the wealth gap between homeowners and renters is increasing dramatically, exacerbating wealth inequality (Li and Fan, 2020). In addition, Wang et al. (2020), further investigation using China's data found that urban and rural housing inequality is a non-negligible component of overall housing inequality. Urban houses are always much more expensive than rural houses, and prices rise faster. Therefore, housing capital gains accelerate the wealth

accumulation of urban households, which in turn widens the wealth gap between rural households and urban households.
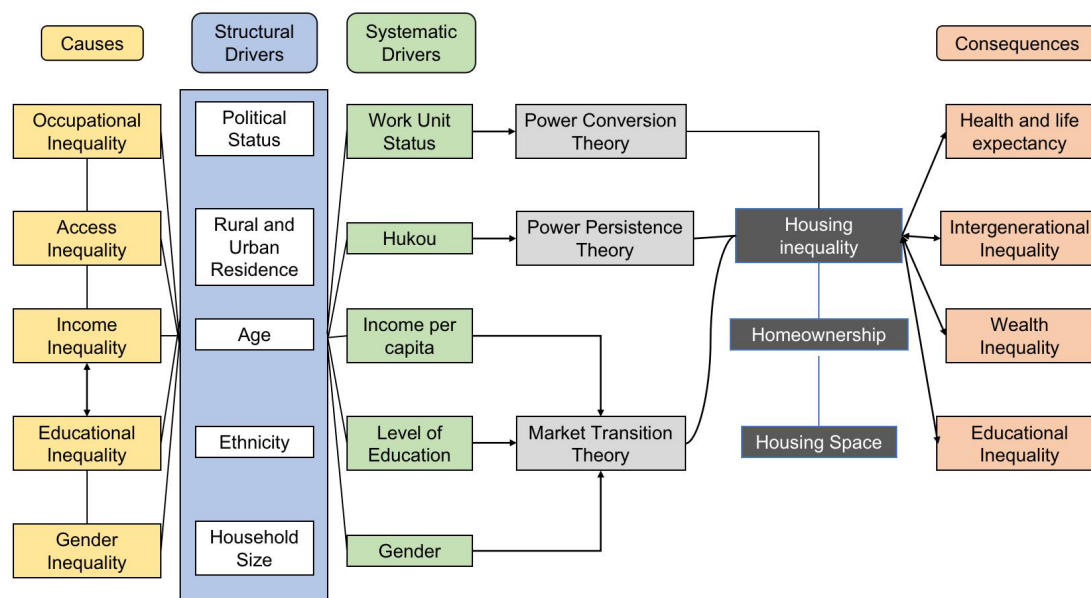

Figure 5 Theoretical and Analytical Framework (Created by Author)

4. Data and Methodology

This dissertation will use both qualitative and quantitative analysis methods for research, mainly relying on secondary data and literature. From the literature review and popular market transition debate, the analytical framework was created to support empirical analysis. The purpose of this work is to understand the relationship between housing inequality and other social inequalities in China's context, to find out the main drivers of housing inequality to respond to city's unsustainable development patterns. Here, I will use regression analysis to capture the relationship between drivers and housing inequalities. In response to China's unique housing reform, China's housing market was divided into three stages to better understand the evolution and changes of housing inequality. The Beijing case study will detail the inequality at each stage.

4.1 Regression Analysis

4.1.1 Data sources

The data of this study are drawn from the 2017 Chinese General Social Survey (CGSS). The CGSS is the country's first nationwide, comprehensive, and ongoing large-scale social survey program. The 2017 CGSS included a total of 12,582

respondents from urban and rural regions throughout 31 Chinese provinces on the mainland. In this study, after restricting respondents from Beijing city and removing options of 'Not Known' and 'Refuse to answer', the total sample is 1,082 respondents. The CGSS survey has a total of 783 variables. Table 3 shows the 12 relevant variables that were chosen for this dissertation.

4.1.2 Regression design

To demonstrate which theory is suitable for current housing market, the literature uses different indicators to represent political capital and human capital. For example, Wu and Michael (2021) used education and work experience to represent human capital and the hukou system for Chinese socialism, whereas Fang and Iceland (2018), used household income per capita and level of education to refer to socioeconomic status and work unit for political capital. In this dissertation, the regressions are designed not only to integrate the above two representative classifications, but also to introduce other 5 structural drivers as independent variables. Furthermore, for more comprehensive analysis, this dissertation will conduct two regressions to evaluate the importance of 10 drivers on homeownership inequality and housing space inequality separately, shown below:

$$Reg\ 1: HouseSpace = \partial_1 Workunit + \partial_2 Hukou + \partial_3 Income + \partial_4 Education \\ + \partial_5 IncomeEdu + \partial_6 Gender + \partial_7 Ethnicity + \partial_8 Political \\ + \partial_9 Householdsize + \partial_{10} Urban + \partial_{11} Age$$

$$Reg\ 2: Homeownership = \beta_1 Workunit + \beta_2 Hukou + \beta_3 Income + \beta_4 Education \\ + \beta_5 IncomeEdu + \beta_6 Gender + \beta_7 Ethnicity + \beta_8 Political \\ + \beta_9 Householdsize + \beta_{10} Urban + \beta_{11} Age$$

(Hint: all meanings of these variables can be found in Table 3)

For the first regression, a multiple linear regression model will be used with a continuous dependent variable – Housing Space. It's a statistical method for describing the simultaneous relationships between numerous variables and one continuous outcome (Olive, 2017). Notably, IncomeEdu is an interaction term because as predicted before the income and education may influence each other simultaneously. However, the income and interaction term have collinearity, which is

manifested as the variance inflation factor (VIF) value is greater than 10, shown in Table 1. Therefore, there will be no income and interaction terms in the following regression equation and results.

VARIABLES	VIF	1/VIF
IncomeEdu	34.25	0.029197
Income	27.68	0.036131
Education	3.51	0.284792
Age	1.33	0.749430
Hukou	1.33	0.749478
Urban	1.15	0.867635
Workunit	1.14	0.878110
Gender	1.13	0.883128
Political	1.04	0.959640
Householdsize	1.03	0.971623
Ethnic	1.03	0.972628

Table 1 VIF

For the second regression, generalized linear model (GLM) will be used since the homeownership is the dummy variable. In GLM, we transform y so that it has a linear relationship with x after transformation. When the dependent variable is a dummy variable and the event rate of the dependent variable is greater than 15%, log-binomial regression is required. As shown in Table 3, 33.15% respondents are homeownership which is greater than 15%. But when run the log-binomial regression, the results fail to converge. That is a constraint in the statistical software procedure that the researcher has no control over. As a result, Poisson regression with robust variance estimation is used to estimate relative risks, which is a helpful alternative to log-binomial regression (Yelland, Salter and Ryan, 2011).

Regression analysis, on the other hand, has limitations due to insufficient data classification. Housing space, for example, does not distinguish between rural self-built houses, urban commercial houses (rent/buy), and public housing. Hukou

does not differentiate between migrants and local people. We are also unable to track changes in housing inequality due to a lack of data from the previous year. As a complement to the data analysis, this dissertation uses the case study method to do more specialized research.

4.2 Case Study

A qualitative case study is a research method that uses a variety of data sources to investigate a phenomenon in its context (Pamela and Susan, 2015). This ensures that the topic is not evaluated through a single lens, but rather through a variety of lenses, this ensures that the subject is not inspected through a single lens, but through multiple lenses, so that multiple aspects of the event can be discovered and understood. Two basic methods to case study technique have been proposed: one by Robert Stake (1995) and the other by Robert Yin (2003). Yin divides case studies into three categories: explanatory, exploratory, and descriptive. He also distinguishes between single-case studies that are holistic and multiple-case studies. Case studies are classified as instrumental, intrinsic, or collective by Stake. According to Yin (2003), a case study design should be considered when the following requirements are met, which correspond to the research objectives of this study, shown in Table 2.

Requirements	Context in this study
The focus of the study is to answer "how" and "why" questions	How the housing inequality evolve and why it exists
Cannot manipulate the behaviour of	Cannot intervene residents'

those involved in the study;	housing choice
Want to cover contextual conditions because they are relevant to the phenomenon under study	Housing inequality related to urban inequalities, housing reform
Or the boundaries are not clear between the phenomenon and context.	Urban unsustainable development and housing inequality

Table 2 Case study requirements

Despite some doubts regarding the efficacy of case studies due to the limits of generalization, case study research is currently one of the most common ways to conduct research in the social sciences (Thomas, 2019). In urban studies, a city as the smallest unit of urban development is suitable for the case study. Beijing, as the capital city, can quickly reflect on and implement political decisions. At the same time, as one of China's most developed cities, the housing problem is particularly concentrated, making it an excellent case study. Literature have introduced different types of housing inequalities globally and described the housing reform in China. The case study in Beijing will more focus on development of housing market and the evolution of housing inequality through three stages.

5. Findings

Table 3 has summarized the descriptive statistics, where includes 12 variables and all nominal variables own their meanings in column 7 and 10. Here, urban variable

means the respondents are living in rural and urban and it is expected that rural residents have larger housing space. Because rural houses are usually cheaper than urban houses and self-building houses always own their yards where occupying larger land. Worth to mention, interview location is used to represent respondents' living place, since it is the best way to speculate the residents' location in the survey. Education levels are divided into two levels, where high-level refers to high school or above and low level means below high school. Ethnicity is categorized into Han nationality and other 55 ethnic minorities.

VARIABLES	Type	N	Mean	SD	Min	Meaning	Percent	Max	Meaning	Percent
Homeownership	Nominal	712	0.331	0.471	0	Non-ownership	66.85	1	Ownership	33.15
HouseSpace	Continuous	1,062	73.14	51.18	5	-	-	760	-	-
Workunit	Nominal	434	0.431	0.496	0	Private Enterprises	56.91	1	State-owned Enterprises	43.09
Education	Nominal	1,078	0.424	0.494	0	Low-level	57.61	1	High-level	42.39
Hukou	Nominal	1,066	0.777	0.417	0	Rural Hukou	22.33	1	Urban Hukou	77.67
Gender	Nominal	1,082	0.478	0.500	0	Female	52.22	1	Male	47.78
Ethnicity	Nominal	1,082	0.928	0.259	0	National minority	7.21	1	Han Nationality	92.79
Political	Nominal	1,080	0.302	0.459	0	Masses & other parties	69.81	1	Member of Communist Party	30.19
Householdsize	Continuous	1,081	2.541	1.214	1	-	-	10	-	
Urban	Nominal	1,082	0.938	0.241	0	Rural residence	6.19	1	Urban residence	93.81
Income	Continuous	1,009	5.311	8.250	0	-	-	96	-	-
Age	Continuous	1,082	52.81	17.491	22	-	-	96	-	-

Table 3 Summative statistics

As shown in Table 3, there are 77.67 % of residents in Beijing and 93.81% of respondents are living in the urban area, which indicates Beijing has been largely urbanized. However, there are only 33.15% of interviewees have homeownership in Beijing. This is probably because of sky-high housing prices in Beijing and lots of migrants who are unable to buy a house with loans due to hukou restrictions.

Table 4 shows the two regression results. For housing space, level of education and household size are only two variables having positive significantly effect on housing space. Holding other factors constant, people accepted high-level education have 14.45 m^2 larger living space than low-level educated people. Each additional member in a household will increases the size of the house by 8.68 m^2, keeping all other variables constant. These findings are in line with Fang and Iceland (2018), who demonstrated the housing size was more affected by socioeconomic status than political status. But in contrast to Fang and Iceland (2018), who used data from Nanjing's 2007 Household Survey to show that, even ten years after the housing reforms, a household's status in the socialist system (being employed by the government or party organization) still has an impact on homeownership. This indicates that housing inequality may be generated differently in various cities.

VARIABLES	HouseSpace	Homeownership
Hukou	1.784	-0.342*
Workunit	-0.269	0.106
Education	14.455***	0.269
Gender	-5.466	0.425**
Ethnic	11.744	0.121
Political	2.703	0.196
Householdsize	8.684***	0.060
Urban	-7.496	0.024
Age	0.292	0.021***
Constant	22.783	-2.506***
Observations	422	306
R-squared	0.090	-

*** p<0.01, ** p<0.05, * p<0.1

Table 4 Regression results

For homeownership, hukou, gender and age are main determinants. Urban hukou have a significantly adverse effect on homeownership. Here we cannot identify

whether they own a house in rural or urban area. If we assume that rural hukou own house in the countryside and urban hukou owners live in the city. Then it makes sense because houses in rural are always cheaper than in the city and most of them are selt-built houses which is simpler to achieve than urban houses. Although we are unable to distinguish between migrants and locals in this study, other researchers have demonstrated that hukou is an important element in influencing migrants' and locals' housing decisions. For example, Huang and Jiang (2009) used data from the 1995 1% Population Survey and the 2000 Census to show that housing reforms in the late-90s have exacerbated the housing inequality among different socioeconomic and institutional groups in Beijing. They argued that socialist institutions like the hukou system have a remaining impact on floor space, despite the prominence of other institutional elements like political status are diminishing. Fang, Liu, and Chen (2020) also revealed that housing inequality was rooted in socialism and has been exacerbated by market-oriented housing reforms. Generally, political power is persistent but decreasing, with hukou serving as permanent institutional discrimination in housing inequalities.

Gender and age, the other two socioeconomic factors, make sense as well. When it comes to homeownership, men have an advantage over women. As previously discussed, women are more likely to face discrimination at work and earn lower salaries than men, and the Chinese tradition of a man owning a property before marrying means that women are less likely to possess a home. Next, property is more likely to be obtained by the elderly. There are two possible explanations: first, they are old enough to have accumulated adequate wealth to purchase a home. Second, if they go through the reform stage, they are more likely to get a house from a public house sale at a quite low price when they are younger.

In general, hukou is the only effective influencer representing power persistence theory in terms of homeownership, though it cannot differentiate the local people and migrants here. The other three relevant socioeconomic determinants – education level, gender, and age – all contribute to market transition theory. The influence of socio-demographic factors is growing, which indicates that a market-based classification mechanism has emerged in China, because housing results are more

dependent on personal choices based on the family life (e.g., age, family size), human capital (e.g., education) and affordability (e.g., income).

6. Case study of Beijing

Table 5 Summary of the main drivers of Beijing housing inequality in the three stages

Year	Stage	Homeownership	House space
1949-1998	Welfare allocation	No homeownership inequality	Work unit
1999-2008	Transition stage - Market-oriented reform	Work unit and Socioeconomic factors	Work unit and Socioeconomic factors
2009-2021	Price booming stage -Financialization of housing	Hukou and Socioeconomic factors	Hukou and Socioeconomic factors

6.1 Welfare allocation [1949-1998]

During the welfare allocation stage, the overall level of housing inequality was low because housing was seen as a basic right to employees (Fang and Iceland, 2018). However, this does not mean that housing inequality was non-existent. Employees were assigned housing as welfare by work units or the government's bureau of housing management based on their seniority, cadre ranking, occupation, household size, and marital status with public renting being the most common tenure (Li and Fan, 2020; Huang and Jiang, 2009). Because housing was dependent on the hierarchical structure of employees both within and within work units, this system was invariably led to housing stratification and inequality (Li and Fan, 2020; Fang and Iceland, 2018).
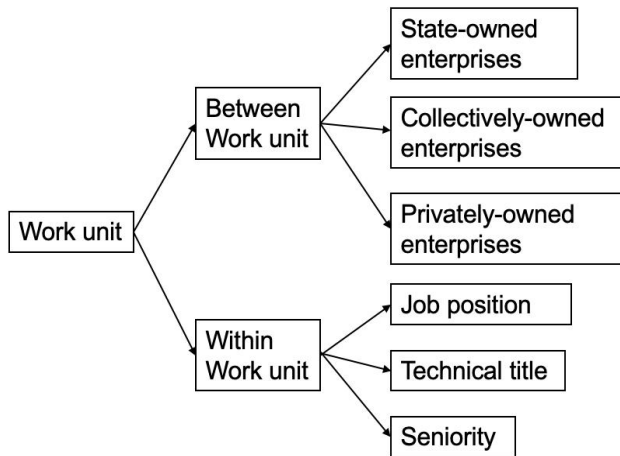
Figure 8 Framework of housing inequalities regarding work unit

Party members and people in positions of authority in workplaces (cadres) formed a bureaucratic power elite that could manipulate housing distribution procedures to benefit themselves and their families (Logan et al., 1999). In government rules, there is presumption proof of political privilege. For example, pre-reform official housing regulations stipulated for laborers to have 42–45 square meters, low-level cadres to have 45–50 square meters, division-level cadres to have 60–70 square meters, and higher-level cadres to have 80–90 square meters (Yang and Wang, 1992). Inequalities in housing space and conditions did exist between different occupational and political groups.

Moreover, there was a disparity in housing provision across work units of various sizes and administrative levels, and some small units were unable to provide homes for their workers (Lee, 1988). Table 6 depicts the huge gap in per capita housing investment between state-owned and collective companies. In 1982, per capita housing investment in state-owned companies (197 RMB) was about 5 times of collective enterprises (34 RMB). Unlike urban residents who work in state-owned enterprises, workers in collective enterprises receive much less housing support from the government.

Housing Ownership Types	Total Housing Investment (billion RMB)	Total No. of Workers (million)	Housing Investment Per Capita (Yuan)
State-owned enterprises	17.0	86.30	197
Collectively owned enterprises	0.9	26.51	34
Privately-owned	1.2	n.a.	n.a.

Table 6 National Urban Housing Investment in 1982 (Source: Lee, 1998)

Additionally, the Beijing municipal government's approach began in 1993 with the 'Kangju Project' (healthy living), and then the national Economic Housing Project in 1998. The goal of the project was to improve living circumstances for low- and medium-income people while also encouraging the development of an affordable housing supply system (Meng and Feng 2005). The target group was limited to employees of state-owned enterprises, reinforcing the housing inequality across work units.

6.2 Transition stage [1999-2008]

Beijing has set an example for other regions in China through the national 'Economic Housing Plan' launched in 1998. This program was aimed to help low- and middle-income families become homeowners by offering affordable housing. As discussed before, the housing reform was implemented in two ways – either sell the public houses at a discounted affordable price to their residents or promote a new private housing market. In the process of housing reform, many housing units on the market were purchased by units and then sold to employees at a lower price than market prices, and only a small portion of them was purchased by individual residents (Fang and Iceland, 2018). The amount of housing available to a work unit was usually dependent on its administrative rank and its contribution to national economic development (ibid). As a result, housing inequality arose across groups of people who were employed in different work units.

By the year 2000, Beijing's ownership ratio has risen to 55.12%, up from 30% in 1992. (Yang and Shen, 2008). People's housing choices are influenced not only by their market resources, but also by their status in the pre-reform system (Logan et al. 2010). Seniority, party membership, and professional title all helped privileged persons secure discounted homes during the privatization of public housing in China (Sato 2006). In short, due to the existence of institutional inertia and path dependence, reform has created benefits for those who were better positioned on the communist regime. The winners in the housing reform process are likely to be those favoured in the previous system (Huang and Jiang 2009; Huang and Yi 2015; Logan et al. 2010; Zhang, He and Zhao, 2018).

Furthermore, rapid immigration from rural areas, and accelerated renovation repair of old and damaged buildings, has resulted in increased housing demand, leading to high housing price. This is the main obstacle to addressing rising housing demand, especially for low- and middle-income families (Yang and Shen, 2008). From 1998 to 2004, Beijing's housing prices grew at an average annual rate of 25%, whereas the average annual increase in household disposable income was only 12% (ibid).

6.3 Price booming stage [2009-2021]

There are many scholars using different criteria to emphasize the housing affordability problem in China. Price-to-income ratio (HPIR) is the most popular measures that is the average house price to the average household income ratio (Rogoff and Yang, 2020). Residual income approach (Zhang, jia and Yang, 2016), refers to the difference between housing costs and income after deducting for non-housing expenditure (Yang and Shen 2008). Li, Qin and Wu (2020) take housing expenditure-to-income ratio measure which refers to the ratio of mortgage payments to income. No matter which way, they all pointed to the same results that cities especially super developed cities including Beijing are experiencing affordability issue. For instance, Figure 9 shows that here Beijing is the most unaffordable city with highest HPIR of 48, which is far from the comfortable level 4-5 (Huang and Yi, 2015).
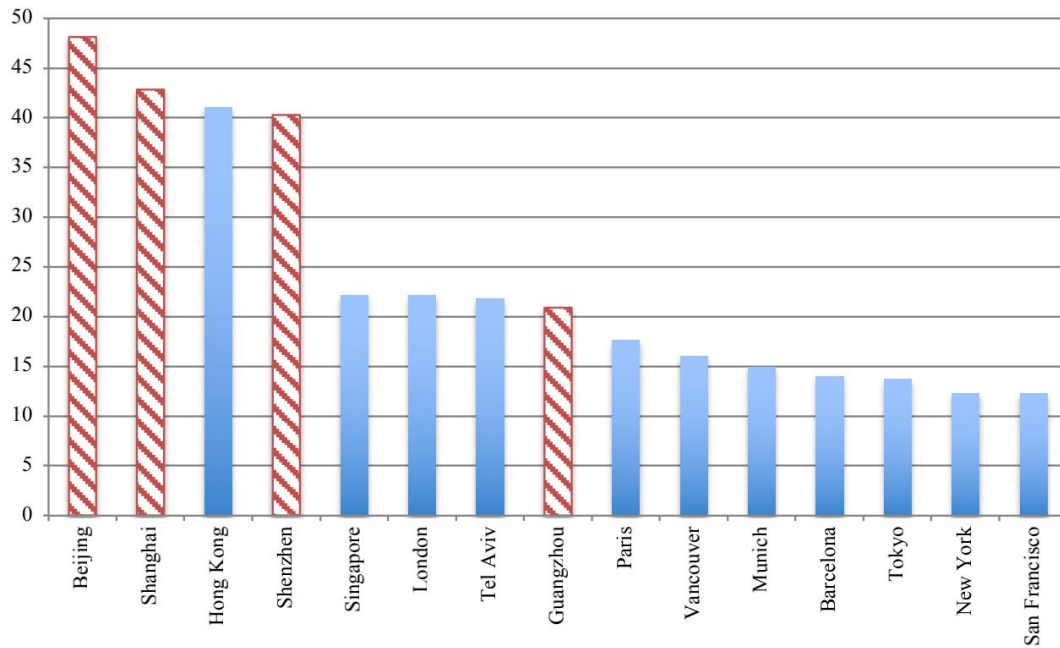
Figure 9 Home Price-to-income Ratios in the World's Major Cities (2018)

(Source: Rogoff and Yang, 2020)

Unaffordability issue has no doubt to rise housing inequality between different income level groups either from ownership difference or housing space. The impetus of constant rising price in housing market can be considered from two way. On the one hand, the influx of massive migrants results in demand-supply mismatch (Li, Qin and Wu, 2020). On the other hand, the demand for speculative investment in housing market exceeds the consumption demand (ibid). As shown in Figure 10, 87% of new home buyers already own more than one home. In 2018, real estate investment accounted for 13% of China's GDP, compared to roughly 5% in the United States historically (Rogoff and Yang, 2020).
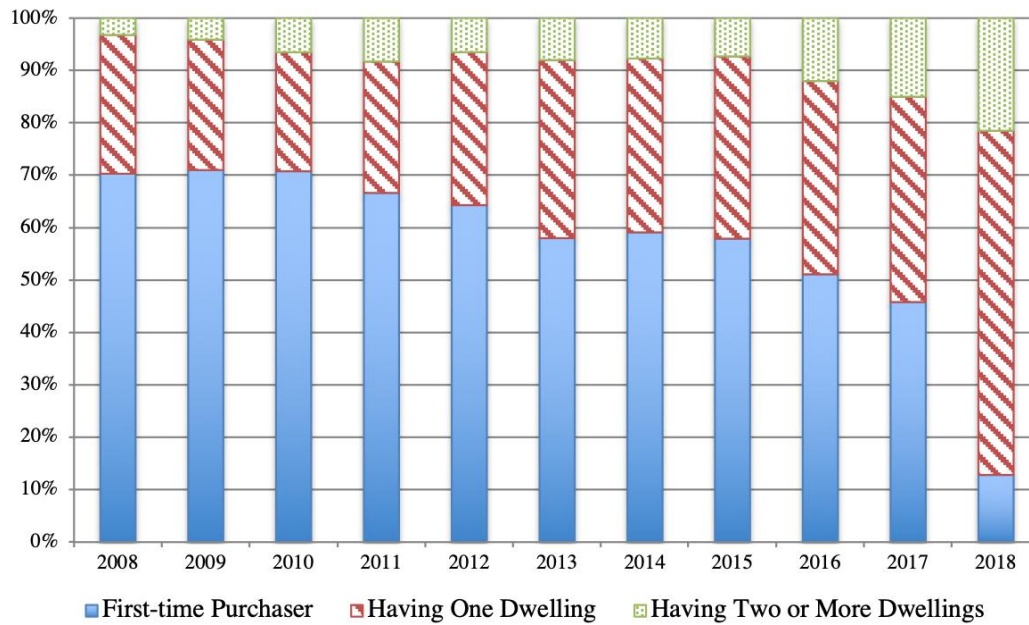
Figure 10 Number of homes for new buyers (Source: Rogoff and Yang, 2020)

The current housing inequality in Beijing are not only existing between various income level groups but also between migrants and local people. Between 2008 and 2019, the number of long-term migrants in Beijing increased from 5.41 million to 7.45 million (30.5 percent to 34.62 percent of the total population) (BMBS, 2021). According to Huang and Yi (2015), housing has been used to exclude and marginalize migrants in China, by categorizing migrants as an inferior social class through the Hukou system and denying their rights to entitlements such as housing, as well as controlling migrant spaces to achieve exclusion and marginalization. Until 2011, migrants were explicitly excluded from the subsidized housing system. Despite this, only approximately 10% of all planned subsidised housing units are for migrants, according to Beijing's 12th Five-Year Plan for Affordable Housing. As a result, the majority of migrants are compelled to seek accommodation on the free market and forced to live in substandard housing due to a lack of financial resources and extremely high housing prices, such as subterranean home (ibid), as shown in Figure 10. According to some estimates, a space in a dormitory room only cost about £16 per month (BBC, 2017). In comparison, the average monthly rent in Beijing last year had risen to almost £523, making it the world's most expensive rental accommodation (ibid). There was even a joke that said, 'Welcome to Beijing (but get our if you don't have money)' (BBC, 2017).

Figure 10: Basement condition, and above-ground apartments (source: Huang and Yi, 2015).

Fig. 11 depicts the location of illegal underground units that are dispersed around the city, rather than being concentrated in one region or sector. In the process of contemporary urbanization in Beijing, this distribution illustrates the necessity for widespread renovation and development of new forms of housing.
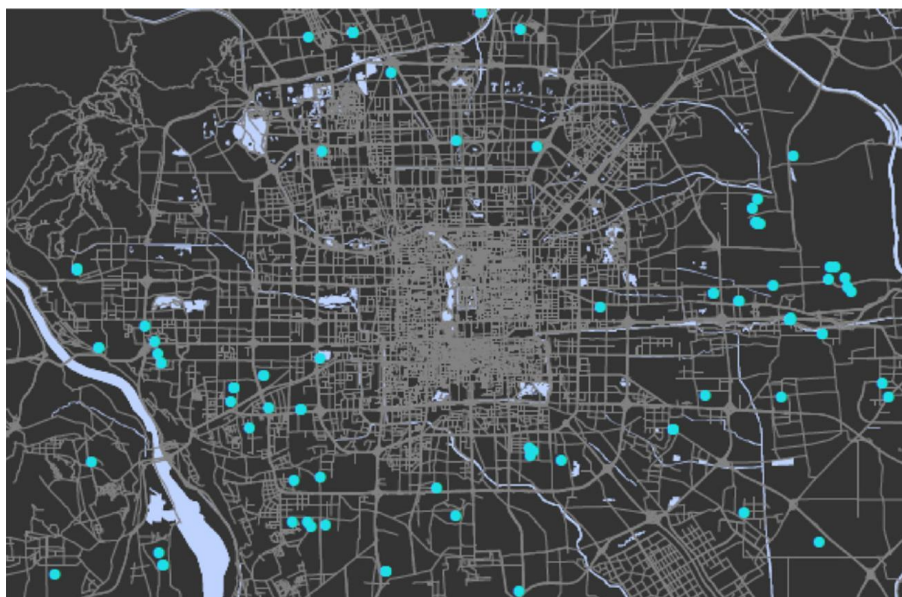

Figure 11 Beijing Underground units, 2012–2013 (Source: Kim, 2016)

Since 2007, the government has committed to developing public housing to satisfy the housing needs of low-income people due to societal and political pressure. 'Economic and Comfortable Housing (ECH)' is one of the most prominent projects, having provided the largest amount of affordable housing in Beijing to date (Yang et. al., 2014). ECH is facilitated by policies such as free land transfers and reductions or exemptions from taxes (ibid). As a result, ECH have a lower average price than equal quality commercial housing. Nevertheless, the public service accessibility and commute distance are still waiting to be improved.

In Figure 12, we can clearly see most jobs are concentrated in city center whereas the ECH projects are in periphery. For low- and medium- income group, they are heavily relying on public transport and accessibility to public transportation and commuting distance largely affected their employment opportunity and possibility to maintain a job (Yang et al., 2014). Moreover, ECH also have low accessibility to elementary and middle schools and hospitals due to long distance (ibid).
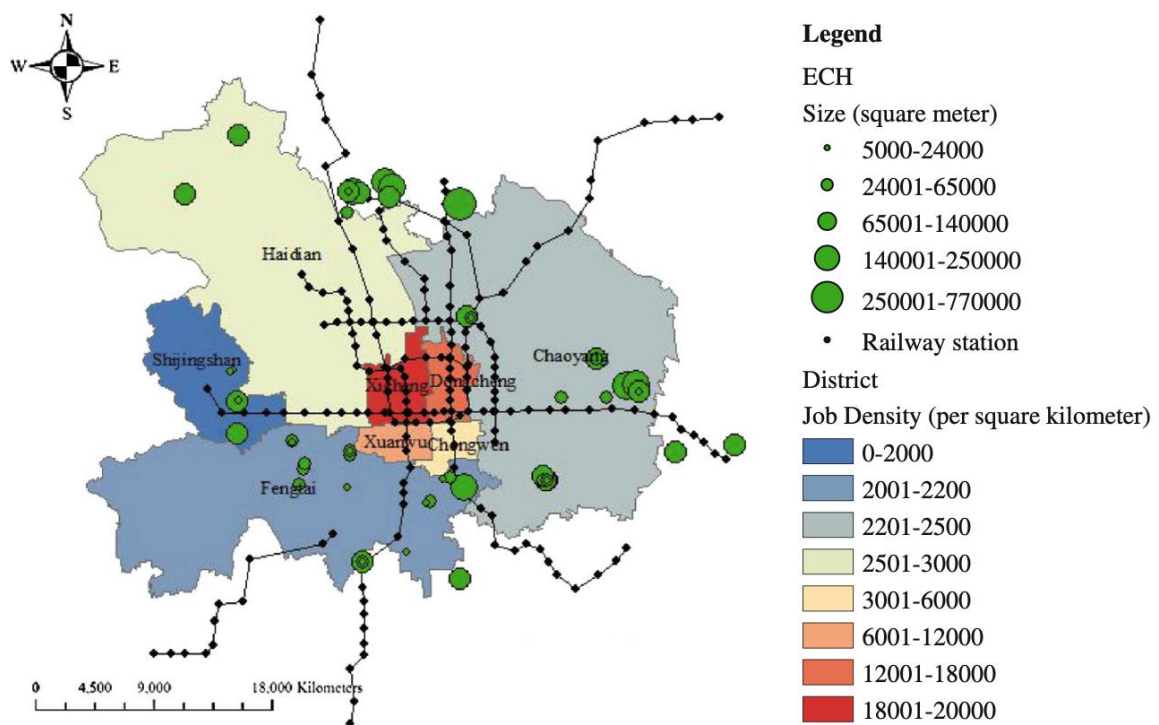

Figure 12 Locations of ECH projects, Job density and distribution of railway station (Source: Yang et al., 2014)

In general, the current housing inequality related to homeownership, living condition and space are concentrated in different income-level groups or between migrants and locals. Therefore, it is reasonable to conclude that hukou and income are main barriers to obtaining a house and improve living condition. This is consistent with the regression results in some way. The regression suggests that hukou, gender, age, education and household size all have an effect on homeownership or housing space. Here, gender, age and education are considered to correlated with income and it is normal for larger household to have greater living space.

7. Discussions

7.1 Social implication of housing inequality

In current stage, the main confliction about housing inequality is coming from affordability issue resulting in low-income people or migrants in developed city like Beijing disadvantage in gaining a house or living in decent condition. According to DT Finance data, young people who want to buy an 80-square-meter, two-bedroom, one-living room for just-needed housing will have to work in Beijing for 71 years based on the city's average disposable income and the average price of second-hand housing (Guo et al., 2021). The overconcentration of financial resources in real estate-related companies has caused various distortions to the economic. Rising property prices also attract companies whose core business is unrelated to real estate to invest in land, diverting talent and resources from areas of economic demand such as commerce, manufacturing, and technological innovation (Rogoff and Yang, 2020). In addition to the possibility for a financial crisis, there is a price bubble in the property market. The price bubble in the real estate market also has potential risks of financial crisis.

However, the housing problem is not merely a financial issue; it is also a significant social issue. Homeownership has not only a valuable asset for families, but also become a requirement for inhabitants to have access to urban education, medical care, and other public services (Tang, Kou and Huang, 2019). Many researchers consider that housing inequalities exacerbates social segregation (e.g., Wang et al., 2020; Yi and Huang, 2014) and aggravate health and socioeconomic inequalities (Aizawa, Helble and Lee, 2020). With growing prices, the difference between

homeowners and renters widens, aggravating educational and wealth inequality. In China, urban tenants cannot enjoy the same education and other public resources as self-owned housing owners (Yi, Ren and Gao, 2019). Moreover, the house's heritable feature leads to intergenerational inequality. In a survey of nearly 400,000 post-90s home buyers conducted in 2020, the Shell Research Institute discovered that 61.1% of post-90s home buyers relied on their parents for financial support (including fully purchased by their parents and partially funded by their parents), compared to only 5.4% of post-80s home buyers (Guo et al., 2021).

Housing inequalities also have a negative impact on both physical and mental health. Ma et al. (2017) conducted a large-scale survey in Beijing in 2013 and found people who live in higher quality commodity housing have a greater ability to avoid high exposure to environmental pollutants. Residents in lower-quality, less-expensive housing suffer more noise pollution and toxic landfill exposure than residents of more comfortable commodity housing. In particular, poorer migrant workers without a Beijing hukou, are exposed to disproportionately high levels of environmental hazard and disease burden (ibid).

In terms of mental health, some scholars think that housing property rights have a positive impact on happiness, and believe that housing can withstand economic difficulties, obtain income returns, and provide economic security (Liu and Du, 2013). According to the 2017 'Research Report on the Housing Status of Young People in Beijing', only 5% of the respondents believed that 'ownership has nothing to do with happiness' and more than 70% of respondents believe that having an ideal housing will improve their happiness (Yi, Ren and Gao, 2019). However, once housing property rights are obtained through borrowing, they may be burdened with heavy debts and cause physical or mental health problems (Nettleton, 2000), or once housing prices fall, they will also cause serious economic losses and affect their happiness. Excessive housing inequality will worsen residents' happiness (Liu and Du, 2013). Moreover, Yi, Ren and Gao (2019), think that families with a large housing area are happier than families with a small housing area.

Therefore, housing as a core of social function and centre of urban sustainability development, it is essential to consider the future development of housing market and set precise policy for government intervention to regulate the housing market.

7.2 Future development of housing market and suggestions

In terms of the economy, some local governments rely largely on selling land-use rights to finance costs such as social welfare and infrastructure (Yu, Cheng and Jia, 2021). Now, with the development of urbanisation, the housing market has almost been explored. The new property tax was introduced by the government to provide a reliable stream of revenue for local governments while simultaneously taming surging housing prices that are out of reach for the younger generation (Liu and Li, 2021). The new tax will raise the cost of owning property, and it is widely believed that it will curb speculation and depress house prices (Yu, Cheng, and Jia, 2021). However, the experts believe that imposing property taxes will only have a short-term effect on housing prices (Yu, Cheng and Jia, 2021). Systemic reforms and comprehensive policy and finance are required in the long run to ensure that everyone has access to decent housing (Kacyira, 2016).

The fact is that the most of individuals in need of housing are poor, and they continue to solve their housing requirements on their own, informally and slowly (Kacyira, 2016). Employees of young migrants in Beijing are at a distinct disadvantage (Lian, 2021). To ensure their continued involvement and contribution, the government should establish a more inclusive housing strategy that provides safe housing access for these young people to achieve socially inclusive urban development process (Housing at the centre, 2015). To tackling the massive housing demand, an effective way is to increase the housing supply, especially in target to low income-level group. Apart from providing sale houses, another challenge for Chinese authorities is the need to enhance the rental sector (Jiang, 2006). The development of low-rent housing should also be coordinated with the development of other public services such as education, medical care, and health, and develop in a balanced manner. We also need to create more inclusive housing financing systems, including incentives for housing finance providers who lend to low-income groups and alternative financial institutions for low-cost homes (Kacyira, 2016).

8. Conclusion

This study has investigated housing inequality in China in terms of homeownership and housing space, as well as the changes in the underlying drivers of housing inequality across time. This study examines contemporary housing inequity from a variety of angles to see how it relates to other types of social inequity. The regression analysis has been used to identify drivers of housing inequalities and track their evolution over the previous 50 years, particularly assessing the influence of housing reform through a case study of Beijing.

The findings show that families with higher social status have more housing consumption and better housing opportunities, and the hukou as a political system has a lasting impact on China's housing inequality. This conclusion supports the market transmission theory and power persistence theory while rejecting the power conversion theory. Second, the fundamental elements of housing inequality revealed in this study, as well as the temporal changes in their roles, shed light on possible strategies to alleviate housing inequality. For example, the results suggest that with the development of the private housing market, weak position in education, gender, age and hukou, is the increasingly significant cause of housing difficulties. The criterion for allocating public housing could be increased to include education, gender, age, and hukou, since the purpose of public housing is to meet the housing requirements of vulnerable populations. Moreover, this dissertation also argued that housing inequality can exacerbate the social stratification and bring other social inequalities consequently, including education inequality, intergenerational inequality, wealth inequality and health and mental impact. Therefore, it has been emphasized that to eliminate the housing inequality needs a comprehensive and inclusive measurement to achieve urban sustainable development.

However, there are also some limitations for this dissertation. Due to a lack of data, a more thorough investigation is required for regression analysis, particularly to separate migrants from locals. Additionally, while homeownership and housing space were utilized as indicators for housing condition in this dissertation, they cannot represent the full housing situation, and other indications such as house wealth are

equally important. Furthermore, there are significant disparities in housing prices and assets among China's provinces and cities. The differentiation of housing in different types of cities is not discussed in this research due to scope constraints. Besides, housing inequality is also driven by a range of factors, including economic development patterns, and globalization. The impact of the rest of the world on China's housing market should be investigated further.

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10. Appendix

A. The brief of government policy in housing market

Time	Regulatory body	Key intervention policies
Oct. 9, 2009	The State Council meeting	From Jan. 2010, qualified exemption of operation tax for private house transaction changes from 2-year holding period to 5-year
Dec. 14, 2009	The State Council	"Four clauses" 1. Increase residential house supply 2. Support the consumption of improvement and self-use house, and suppress speculative house investment 3. Reinforce housing market supervision 4. Promote public housing construction
Jan. 10, 2010	General Office of the State Council	"Eleven clauses" Regarding to consumption and investment demand for housing, reinforce the differential policy in terms of 1. Credit and loans 2. Taxation
Mar. 10, 2010	Ministry of Land and Resources	Strengthen the supply and supervision of land use for real estate development by 1. Setting minimum deposit to 20 % of land base price for developers 2. Requiring paying off 50 % of land price within one month of land purchasing
March 22, 2010	Ministry of Land and Resources meeting	Improve land auction system, and increase land supply; for cities with higher price level and growth rate, strictly control land supply to the construction of big size housing
Apr. 2, 2010	Ministry of Finance	For a person who has a house purchasing history, the tax benefit for first-time home buyer is no longer applied to this person or others who have bought another home together with the aforementioned person
Apr. 15, 2010	The State Council meeting	Down payment for buying a second home is no less than 50 % of house price, interest rate raises 10 % above the base rate; Down payment for a first home buyer with the purchased home area above 90 square meters is no less than 30 %
Apr. 17, 2010	The State Council	"New Ten Clauses" Stabilize house prices by introducing accountability mechanism for local governments Increase public housing supply and construction Suppress speculative housing demand