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Heterogeneity and dynamics in China's emerging urban housing market: two sides of a success story from the late 1990s

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Abstract

China's emerging housing market plays a pivotal role in the ongoing economic reforms. The complete abandonment of the socialist housing allocation system in the late 1990s has led to profound changes in housing provision and consumption in urban China. This paper, through analysis of 2000 Chinese census data and other comparable data sets, studies housing trends in urban China and in its four autonomous municipalities in the late 1990s. It is found that urban homeownership increased dramatically and urban housing conditions improved by almost all accounts, while housing gaps were widening. Occupation and education became much more deciding factors in housing distribution. Both intra- and inter-municipality disparities in housing quality were evident, due in part to the differences in the reform measures undertaken. The drastic changes in the housing sector manifest the phenomenal socioeconomic changes as a result of 20 years' economic reforms. Housing reform seems to be successful in increasing distributional inequality as a way to introduce market-based incentives and improve productivity. However, those who were in power appear to have maintained and extended their advantages in the new system. Therefore, while the market is in the making, demographic and institutional factors instead of economic factors are more relevant in housing provision and residential behavior.

Keywords: Housing distribution; Housing reform; China; Autonomous municipalities

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Introduction

Recent years have witnessed a rapid increase in academic research and policy debate on China's emerging housing market in general (e.g., Kim, 1987; Lee, 1988; Tolley, 1991; Dowall, 1994), and on housing choice in particular (e.g., Zhou & Logan, 1996; Li, 2000). This growing literature reflects the importance of residential property in China's economic reforms as well as in individual's household assets. While early studies were mainly focused on the institutional perspective of Chinese housing reform and its impacts on the housing provision system (e.g., Tong & Hays, 1996; Wang & Murie, 1996; Wu, 1996), researchers have recently begun to explore factors affecting housing behaviors in selected urban areas at particular points of time (e.g., Logan, Bian, & Bian, 1999; Fu, Tse, & Zhou, 2000; Li, 2000; Huang & Clark, 2002) and examine housing conditions of underprivileged population (e.g., Wang, 2000; Shen, 2002; Wu, 2002a). The emerging housing market is not only a topic of great academic interest but also a manifestation of the remarkable socioeconomic changes as a result of China's economic reforms over the past two decades.

While research on China's emerging housing market is clearly gaining ground, existing literature on housing and homeownership is largely grounded in Western countries. In the US context, for instance, housing has been part of social welfare policy and community development policy, serving as an important means of income redistribution (Hays, 1995). While one major goal of US housing policy is to improve the housing of the poor, the primary beneficiary of US housing policy is the middle class family (Weicher, 1979). Through private ownership, housing is the main investment instrument for most American families (Adams, 1987; Megbolugbe & Linneman, 1993; Eggers, 2001). Citing the importance of housing in both economic and social development, the US government has made housing a centerpiece in the policy agenda, persistently enhancing the housing market and promoting homeownership through various public programs and tax incentives (e.g., The Bush Administration, 2002).

The housing sector has taken on an added importance in China. While urban China faced persistent housing deficiencies, urbanization reached a new height after decades of stagnation in the late 1990s. Coupled with the longest period of economic prosperity in modern China, there was a tremendous pent-up demand for urban housing. Meanwhile, the government recognized the ineffectiveness of the socialist housing provision system and initiated housing reform in an attempt to establish housing markets and increase housing provision in urban China (Shaw, 1997).

For the government, increasing housing consumption is not only a stimulus to the economy but also a symbol of economic progress in urban China. To illustrate the importance of housing reform, the central government elevated the National Commission on Housing Reform from minister level to vice-premier level in the early 1990s. Further, Premier Zhu Rongji made accelerating residential development and elevating urban homeownership as a top policy priority after taking office in 1998. The explicit goal was to increase housing and related consumption, to improve economic efficiency, and to reduce the government's burden on maintaining and constructing urban housing. Meanwhile, the implicit goal was to reduce in-kind/non-cash subsidy to urban residents, to create an urban middle class, and to stabilize the society by increasing housing consumption and encouraging people to own a piece of property. Subsequently, the State Council decided to terminate welfare allocation of housing throughout the country and

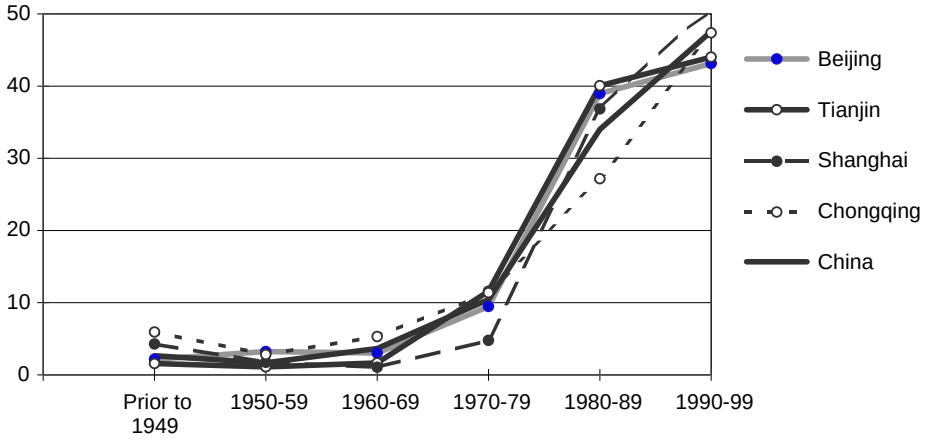


Fig. 1. Percent share of existing housing floor space built in different decades. *Note*: Each point = the floor space build in each decade/the total floor space of that location in 2000 (include both urban and rural areas).

completely abandon the old housing provision system (Kou, 1998; Li, 1998).[1] Therefore, establishing housing market and promoting housing consumption have been a vital element of broad economic reforms, especially in the late 1990s (Wang & Murie, 1996).

The housing reform measure adopted in 1998 became, in a sense, a one-time deal to materialize the "merit, need, and seniority" credit that one had accumulated through the years of service in the socialist work-units (*Danwei*) into homeownership. Few people refused such an opportunity, given the huge discount in sale price, the continued rise in rent over the past several years, and the proposed rent hike on the horizon. Consequently, homeownership rate in urban China shot up sharply at the end of the 1990s, from about 30% in 1995 to more than 70% in 2000. Housing construction also reached a new record high (see Fig. 1). This was particularly remarkable given the lack of a comprehensive housing finance system, a secondary housing market, or well-defined property rights. However, the phenomenal rise in homeownership and housing consumption was neither uniformly prevalent in the population, nor equally distributed across regions. Such unequal distribution has tremendous and long-lasting impacts on welfare distribution and socioeconomic equity in urban China. Moreover, since income is difficult to measure in light of rapid economic transition, investigating changes in housing distribution may shed light on China's increasing gaps in wealth.

While existing housing literature has mainly focused on particular points of time, this study is to analyze housing trends over time and across four largest metropolitan areas in China. More specifically, with the recently available China's census data, it attempts to delineate diverging trajectories in housing provision and homeownership attainment, and examine the factors behind the phenomenal rise in housing consumption in the late 1990s.

This paper proceeds as follows. First, it provides a brief overview of urban housing reform and regional development policy in China and a quick survey of recent housing literature.

[1] Although the commercial real-estate sector is gaining ground, the establishment of housing market is largely through privatizing public-owned housing and transferring from welfare rental housing to homeownership (Lee, 2000).

Second, it analyzes both intra-municipality and inter-municipality differences in housing. Third, it investigates the rising consumption of urban housing and the divergent trends in housing distributions from 1995 to 2000. Specific topics include building materials, building method, housing facilities, living arrangement, housing floor space, home crowding, and homeownership. The consequences and implications of the emerging housing market are discussed in the concluding section.

Urban housing reform and emerging housing market in China—a brief review

The welfare housing system, operated since the foundation of the People's Republic of China in 1949, was designed to provide urban dwellers with decent and low-cost accommodations. The government owned most urban land and monopolized land transactions since 1949. Home-ownership and private property rights virtually vanished since the late 1950s. Housing provision was largely based on merit, seniority, and need. The rent charged was so low that, since the mid-1950s, it could not even cover the cost of maintenance (Zhang, 1996), let alone the initial investment.

The state directly controlled the production, allocation, operation, and pricing of urban housing, playing a dual role as both investor and developer, but without the concern of revenue or return. Under this system, the state collects an implicit income tax from workers through low wages and redistributes them back to urban dwellers in forms of housing, food, medical care, and the like. This egalitarian policy equalizing wage differentials between populations was in accordance with the fundamental tenet of socialist ideology. It was believed that income discrepancies caused inequity in capitalist society (Lim & Lee, 1990). Ironically, since housing was the biggest chuck of lifetime welfare payment for most urban residents, the allocation was always very contentious and subject to political influence. Further, urban residents had little choice regarding residential locations and housing size.

The state was reluctant to invest in urban housing, since housing was deemed "non-productive" (Zhang, 1996). Although housing was often the largest welfare benefit from the state, urban residents as renters were less willing to upkeep their housing. Housing shortages, substandard quality, and lack of basic facilities were some of the common problems plaguing the urban housing sector. For instance, urban per capita living space decreased from 4.5 m^2 in the early 1950s to 3.6 m^2 in the late 1970s (National Bureau of Statistics of China, 2001a). The phenomenon of pent up demand was evident throughout urban China. Housing deficiencies progressed to the level of a crisis when a large number of youth returned to the cities from years of reeducation in the countryside during the late 1970s and the early 1980s. The problem of shortage and deficiency was not unique to the housing sector; it exemplifies the failure of the broad economic system.

The 1980s-early experiments

A new historic era in China began in the late 1970s. After years of economic stagnation and political turmoil, the central government was forced to recognize the deficiencies of the old socialist system. Since then, China has engaged in a gradual transition away from a centrally planned economy to a market-oriented one.

Housing was on the top of the reform agenda at the beginning of economic reforms (Zhang, 1996). While the road map of housing reform was clear, the market reform was carried out step-by-step with an approach of trial and error. Market was first developed only as a supplement to the planned economy in the beginning (Tsou, 1986). Owing to the political importance of the urban housing sector and the strong resistance of old institutions against reform, the government was very cautious and conducted various experiments and pilot studies. Consequently, the first stage of reform was largely devoted to invigorating the old housing allocation system instead of establishing a real housing market (Tolley, 1991; Lim & Lee, 1993; Wang, 1995).[2]

Due to high inflation and the political instability in the late 1980s, housing reform was stuck in an impasse.[3] While housing conditions improved steadily and total urban housing floor space expanded two fold over the decade (see Fig. 1), housing reform failed to shift the burden of housing development to private sector or to establish a functional housing market. Few policies provided incentives for private or other forms of housing development. The public sector kept the leading role in housing construction (Liu, 1991). Private housing comprised only 18.7% of total housing floor area in 1990, which did not change significantly from the rate of 17.7% in 1982.

Although nominal rent kept rising steadily each year in the 1980s, actual rent[4] did not. Because of inflation and a rapid increase in real income of urban workers, housing burden[5] in urban areas declined precipitously from 1.93% of household income in 1978 to 0.74% in 1990 (National Bureau of Statistics of China, 1993). Even in Beijing, where is known for high housing cost, housing expenditure only comprised 1.29% of the total urban household expenditure in 1990 (Beijing Research Group on Public Rental Housing, 1997). Due to a higher housing price/rent ratio, urban residents had even less incentive to purchase their homes after years of housing reform (Chen, 1996a, c).

At the same time, the power of the central government, particularly with respect to capital investment, was gradually decentralized to work-units and local government (Chen & Gao, 1993). Work-unit and local government, however, were reluctant to give up their power as property owners and housing investors in the absence of the full accountability of the market (World Bank, 1992).

Intrinsic conflicts exist in housing development. While the state government is the *owner* of all urban land, the local governments and state-owned-enterprises are the *users* of the property. Given the soft budget constraints, work-units, representing the old institutions of the socialist system, would prefer maintaining property ownership and allow their employees to pay a nominal rent so that they could exercise direct controls over their employees. By providing low-cost housing, work-units were also able to maintain a comparative advantage to their competitors in the private sectors. Consequently, the public sector had continued and even expanded the hidden non-cash compensation to those living in urban rental housing.

Rural residents, on the other hand, experienced a rapid increase in housing expenditure (Chen, 1996b). Housing gaps expanded significantly between rural and urban areas in the 1980s,

[2]This in part reflects government concerns over alienating their urban constituents who are in a relatively strong position in China's political power structure.

[3]The government seemed even more reluctant to carry out any drastic reform measures in the early 1990s, fearing urban residents would stand against the government as they did in the summer of 1989.

[4]It denotes rent adjusted for inflation.

[5]It denotes the share of household expenditure on housing in the total household expenditure.

so did the differences in amenities and infrastructure. As a result, the government had to maintain and sometimes even strengthen the residency registration system (*Hukou*), strictly enforcing migration control (Chan & Zhang, 1999). Major urban areas, such as Shanghai and Beijing, have some of the toughest migration controls in the country to keep rural residents away from the city where jobs are more available and infrastructure is better built.

The 1990s–new twists and turns

The early 1990s was marked as a turning point in housing reform. The central government extended housing reform from pilot tests and experiments in selected cities to overall implementation in all urban areas (Zhang, 1996). Three important policy decisions were issued in 1988, 1991, and 1994, respectively.

There was visible progress in the following years. Urban residents spent more on housing. Per capita household expenditure reached about 4% to 7% of the average household income by the end of 1995. Urban residents enjoyed more housing space over time. Meanwhile, an estimated 30.5% of urban housing became privately owned (Zhang, 1996).

Such progress was uneven, however. The larger the proportion of government agencies and state-owned-enterprises in one region, the slower the housing commercialization process seemed to be. For instance, by the end of 1995, owner-occupied housing comprised only about 18% and 15% of the housing stock in the urban area of Beijing and Tianjin, respectively (Beijing Research Group on Public Rental Housing, 1997). Meanwhile, places such as Guangdong Province and Zhejiang Province, where private enterprises tend to dominate, over 60% of the urban housing units were privately owned.

Further, the overall progress of housing reform was below the goal set by the 1994 plan (Kou, 1998). Reform faced more passive resistance in major cities such as Beijing and Tianjin, where state-owned-enterprises and government agencies still played a dominant role. Since China adopted a gradualism in economic reform, new and old institutions coexist in the process. State-owned-enterprises and government agencies, which played a predominant role in the old socialist system, still have significant clout in the bargaining process. These old institutions also have a strong tendency in maintaining the status quo and resist any changes that may hinder their interests. Meanwhile, the government is very responsive to the concerns of major city residents, since they are quasi-constituents of the state. While keeping rent low appeases urban residents, housing reform is running significantly behind schedule. Therefore, Premier Zhu and the new State Council took stark measures in 1998 to commercialize public housing, to establish private property ownership, and to make the market as the sole means of housing distribution (Zhu, 2002).

Regional development policies

Another important, yet often overlooked, factor in housing provision is regional development policies. Since the beginning of economic reforms in 1978, China have gradually shifted its development policies from being based on self-reliance and balanced regional development to being based on comparative advantages and an open door policy. To improve economic vitality of

the country, the central government has relinquished some of the direct control, promoting foreign investment and private enterprises in many costal provinces (Demurger et al., 2002). Meanwhile, local governments gained certain autonomy over their development policy, land use, and housing investments (Wu, 1996). While most private investment is located in China's relatively prosperous coastal regions, interior central and western regions have seen little changes over the years.

As a byproduct of the new regional development policies, the economic development gap between costal and inland regions has grown substantially in recent years (Lin, 1995; Kanbur and Zhang, 1999). Economic prosperity along the costal regions has helped fueling their housing consumption in a rather rapid pace, while the inland areas have lagged behind. While this paper is not focused on regional differences in economic development, Shanghai and Chongqing are located in coastal and inland areas respectively and their housing distributions are somewhat reflective of the significant regional disparities in economic development.

Recent studies

In the expanding literature on China's emerging housing market, recent studies were more concerned with the consequences of housing reform on distributional equality (Lee, 2000; Wang, 2000), on social and spatial arrangement (Wang & Murie, 2000; Hu & Kaplan, 2001), and on housing affordability (Rosen & Ross, 2000). Huang and Clark (2002) reviewed relevant literature. A growing number of studies relied on microdata and investigated the relative importance of factors in housing consumption and tenure choice in selected cities (e.g., Fu, Tse, & Zhou, 2000; Huang & Clark, 2002; Li, 2003). For example, Li (2000), based on a survey of newly completed commodity housing in Beijing and Guangzhou, discovered that the work unit was still the single most important buyer and distributor of commodity housing in 1996. Significant differences in housing distributions were found in the commercial housing market between Beijing and Guangzhou. Tenure status had a close association with the strength of one's work-unit. Meanwhile, Huang and Clark (2002) showed that the mechanism of housing distribution is quite unique in China. Rentership does not necessarily imply inferior socioeconomic status of the households. Indeed, many officials chose to rent instead of own, since renting was cheaper for them. Many local governments and state-owned-enterprises were reluctant to commercialize their housing stock.

Despite a large number of studies, few have looked into the changing dynamics of the emerging housing market, and inter- and intra- municipality differences in housing. Meanwhile, the rapid changes in the housing sector present a great challenge to housing researchers, since cross-sectional study relying on observations at particular points of time does not adequately reveal the changing dynamics of housing reform.

In addition, several questions remain unanswered. What is the status of the emerging housing market of China in the year 2000? Had housing distributions fundamentally changed in the late 1990s, as a result of the 1998 housing reform measure? Who has gained and who has lost in housing reform? How much housing difference is there across municipalities and within municipality? Has the housing reform fulfilled its original goal of expanding residential constructions and housing quality? These are the research questions going to be addressed in the following sections.

Data–1995 by-census and 2000 census

Perhaps due to the lack of data, empirical study lags behind the rapid residential development and the profound changes in the housing tenure structure currently taking place in urban China. There has not been any publicly available nationally representative survey[6] on housing quality until the 1995 1% by-census, nor any nationally representative homeownership data until the 2000 census.

This study builds on data from Chinese 2000 census combined with comparable data from 1995 by-census and a survey conducted by Xueguang Zhou and his colleagues in the early 1990s (Zhou, 2000). Data collected at two time points allow investigating changes in housing sector in the late 1990s. The 1995 by-census[7] covering one percent of China's total population or about 12 million people is the first experiment of National Bureau of Statistics of China to collect data on housing at the national level. It is also the prelude of the 2000 census and has a good comparability with respect to census questionnaire. The by-census has a reliable coverage for major metropolitan areas (National Bureau of Statistics of China, 1996).

To compare with the 1995 by-census, the 2000 census is a full-scale census. The 2000 census provides the most comprehensive coverage for China's housing to date. It is also the first Chinese census to use sample long-forms to collect additional information, especially on housing.[8] In addition to housing conditions, the 2000 census collects detailed information on housing tenure status (National Bureau of Statistics of China, 2001b). Lavely (2001) overviewed Chinese 2000 census data. Wang (2003) offered early insights on China's housing sector with 2000 census tabulations. Preliminary findings suggested a growing inequality in the urban housing sector.

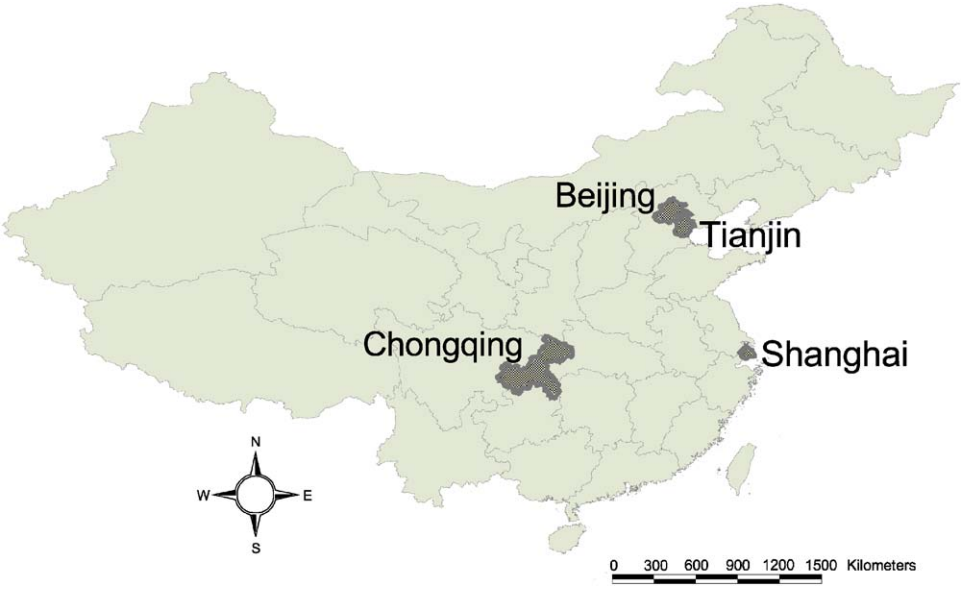
The four autonomous municipalities

In addition to China as a whole, this study looks into the four autonomous municipalities in China, which are Beijing, Shanghai, Tianjin, and Chongqing (see Map 1). These four municipalities are the largest and most populous metropolitan areas in China, having direct coverage in the national census. They are directly under the control of the central government and enjoy provincial status. The governments of the autonomous municipalities have considerable freedom in development strategies and market reforms. However, they are not representative of the regions in which they are located. Instead, these municipalities are chosen to provide a glimpse of the emerging housing market in the major metropolitan areas of China. In the year 2000, these four autonomous municipalities live about 6.5 million people or 5.5% of China's total population

[6]While several surveys have been used in housing studies such as Huang and Clark (2002), Logan and Bian (1993), and Li (2003), most of these surveys are cross-sectional, relatively small in scale, and in selected cities.

[7]According to the information provided by the National Bureau of Statistics of China through the International Monetary Fund, the survey uses a three-stage clustered sampling (County, Township, and Enumeration District) with the probability proportionate to the estimated population size. The reference data of the 1995 by-census was October 1, 1995.

[8]The long form was completed by 10% of households.



Map 1. The Four Autonomous Municipalities in China.

while producing 11.5% of the nation's GDP (Gross Domestic Product). These four municipalities, except for Chongqing, have a much larger share of college graduates and a much larger share of urban population than the national average (See Table 1).

These four largest municipalities, as cultural and political centers of China, serve as economic engines of the region. Beijing, located in the northeastern part of the country, is the capital of China. While Beijing Municipality has the third large population size in the four autonomous municipalities, the land area ranks the second next to Chongqing. The total population size is about 14 million. There are a total of eight urban districts, five suburban districts (*qu*) and five rural counties (*xian*) in Beijing. Four of the urban districts, having a large share of agricultural population, were recently upgraded from county status. Beijing has many state and municipal government agencies, and a large number of state-owned and municipality-owned-enterprises. The work units employed more than 40% of the workforce in 2000, which was more than three times of the national average (See Table 1). Because of the complexity of the property ownership structure, Beijing is relatively slow in housing reform.

Tianjin Municipality, situated to the southeast of Beijing, is an important seaport of China. Tianjin ranks the third in the four municipalities regarding land area, while it has the smallest population size. There lived about 10 million residents in total. Tianjin has six urban districts, eight suburban districts, and four rural counties. Tianjin used to be a shinning star in the era of industrialization. The city having a large number of state-owned-enterprises faces some difficulties in invigorating its economy. Although Tianjin is only one and a half hour train ride away from Beijing, housing price in Tianjin is substantially lower than that in Beijing, which is

Table 1
Population growth[a], population compositions, and employment in China and the four autonomous municipalities

	Population			2000			
	1990	2000	% Growth	% College graduates[b]	% Urban population[c]	% of employed persons work in state-owned units	Per capita annual disposable income of urban residents[d]
China	1133.7	1295.3	14.3	3.6	36.2	12.5	6280
Beijing	10.8	13.8	27.7	16.8	77.5	41.1	10,350
Tianjin	8.8	10.0	13.9	9.0	72.0	25.9	8141
Shanghai	13.3	16.7	25.5	10.9	88.3	26.9	11,718
Chongqing	28.9	30.9	7.1	2.8	33.1	9.0	6276

Source: (a) The data on 1990 are obtained from *Major Figures on 4th Population Census of China (manual tabulation)*, edited by the National Population Census Office. The data on 2000 are obtained from advance tabulation of the 5th national population census, with November 1, 2000 as the reference time. (b) National total population includes the Chinese People's Liberation Army, but population by regions does not include Army personnel. (c) China Statistical Year Book 2001, National Bureau of Statistics of China.

[a]In millions.

[b]Associate degree or higher.

[c]Population living in areas under the jurisdiction of cities and towns.

[d]Chinese Yuan.

reflective of the different levels of housing demand and economic development in the two municipalities.

Shanghai Municipality, in the forefront of Chinese economic development, occupies a central spot of China's coastal line where the Yangtze River enters the East China Sea. Shanghai, with a large and skilled workforce, has been a powerhouse of economic development and industrialization in China for several decades. Although there were many state-owned-enterprises in Shanghai, Shanghai seemed to have fared reasonably well in recent industrial transitions and urban revival (Wu, 1999). In stark contrast to Shanghai's forefront role in China's industrialization, its housing sector was known for overcrowding and shortage prior to housing reform. Despite its forefront position in economic development, the government did not spend sufficient effort on the housing sector in Shanghai before the era of economic reform. Shanghai was the most populated municipality in China, before Chongqing became an autonomous municipality. About 17 million people live in Shanghai. Although Shanghai is very populated, the land area is the smallest in the four autonomous municipalities. Therefore, population density is quite high. There are 13 urban districts, four suburban districts, and three rural counties in Shanghai. Seven of the districts were recently elevated from county status, which is reflective the rapid urbanization process.

Chongqing Municipality, located on the upper reaches of the Yangtze River in the hinterland of China, was the wartime capital of China during World War II. To expedite economic development of the West, a large piece of area was separated from Sichuan province; Chongqing Municipality was established and designated the autonomous status in 1997. In the four

Table 2
Inter-province migration based on place of usual residence, 1985 and 1990

	Migration during 5-year period			% Of the population
	Out	In	Balance	
Beijing	17,436	189,225	171,789	12.4
Tianjin	10,428	49,236	38,808	2.8
Shanghai	16,294	217,143	200,849	12.0
Chongqing	110,313	44,810	−65,503	−2.1

Source: Tabulation on the 2000 Census of China (Table 7-4), the National Population Census Office at the National Bureau of Statistics of China.

autonomous municipalities, Chongqing has the largest land area, the largest population size, and the largest share of rural population (Han & Wang, 2001). There are six urban districts, four suburban districts, four suburban cities, and 18 rural counties in Chongqing. The larger share of counties indicates that Chongqing is less urbanized than the other three autonomous municipalities. Only 9% of the work force was employed by the state owned units, which is even below the national average of 12.5% (See Table 1).

These four municipalities are in different stages of economic development, having different demographic compositions. Beijing is the intellectual center with almost 17% of the population having college education or 13 percentage points higher than the national average. Chongqing on the other hand has only 2.8% of the population as college graduates. The low education level in part reflects the large share of rural population in Chongqing. Only 33% of the population in Chongqing is urban resident, while more than 70% of the population is urban resident in the other three autonomous municipalities. Table 2 reports the migration of the four municipalities between 1995 and 2000. It appears that Beijing and Shanghai were more attractive to migrants, while Chongqing was the only autonomous municipality that lost population to out-migration in the 1990s.

All of the four municipalities experienced population growth. Population in Shanghai and Beijing grew by more than 25% between 1990 and 2000, while Chongqing only saw a moderate 7% growth (See Table 1).

The four municipalities except for Chongqing have per capital income much higher than the national average. Shanghai and Beijing have the highest per capita urban income in China, which is about 70% higher than that in Chongqing (See Table 1). Housing is also more expensive in Beijing and Shanghai. While 50% of housing units in Beijing and 44% in Shanghai are higher than the national average, only 24% in Chongqing are above the national average.[9]

[9]Almost 34% of housing in urban China was above the national average cost of urban housing, which was about 30,000 RMB yuan in the year 2000.

Intra- and inter-municipality differences in housing

Three levels of intra-metropolitan geography in the census

Census geography can sometimes be perplexing.[10] An autonomous municipality is an administrative unit, which is under the direct control of the central government as a province. The boundaries of the three established municipalities were unchanged between 1995 and 2000, while the newly designated Chongqing Municipality did not have coverage in the 1995 by-census.

Within each autonomous municipality, there are three levels of geography, which are city, town, and county. However, these three levels of census geography do not always correspond to the respective administrative units. In the census, city (*shi*) refers to the areas as the most urbanized portion of the municipality encompassing urban districts (*qu*) and a portion of suburban districts, which is under the administration of city or district governments and residents' committees. The vast majority of the permanent residents in city are non-agricultural population (*feinongye*) in their household registration (*hukou*). Meanwhile, town (*zhen*) usually is located outside city and ranks between city and county (*xian xiang*) with respect to the share of non-agricultural population. In the census, town refers to large part of suburban districts and part of rural counties, which is under the administration of town governments and villagers' committees. County in the census refers to a small part of suburban districts and most part of rural counties, including market towns, villages, and rural farmland. Most people living in county have agricultural status in their household registration (National Bureau of Statistics of China, 1999). In this analysis, urban area refers to the area in both city and town where housing reform takes place.

Large differences exist within municipality with respect to building materials, living arrangement, housing facilities and building quality. City or the central part of the municipality usually fares better than the peripheral parts of the municipality, which are more rural in nature.

Building materials

There are clearly intra- municipality differences in building quality. Three major types of building materials are used in China, which are (1) steel and concrete, (2) stone and brick, and (3) wood, bamboo, and grass. Steel and concrete as a superior and more expensive building material is necessary for multi-story buildings—the typical type of residential building in urban China. Table 3 shows that city housing is more likely to use steel and concrete as building material, while county housing is more likely to use wood, bamboo, and grass. Township lies in between city and county with respect to building materials. In addition, there are significant inter-municipality differences in building materials. While housing in Shanghai is more likely to rely on steel and concrete, housing in Tianjin is least likely. The two municipalities have a striking 36 percentage-point difference. Beijing fares better than Tianjin and Chongqing, while Chongqing mirrors urban China as a whole.

[10]The 1995 by-census and the 2000 census share similar census geographic designations. Zhou and Ma (2003) suggested that, due to rapid urbanization and the increasing number of rural migrants in the urban areas, the trichotomous identification has changed over time and may not always properly reflect the urbanization process in China.

Table 3
Percent of housing in each zone that is built in steel and concrete, 2000

	City	Town	County	Total
China	—	—	—	14.4
Beijing	33.8	20.7	4.1	26.4
Tianjin	14.0	5.3	0.8	9.1
Shanghai	50.7	43.5	18.1	46.0
Chongqing	34.3	27.0	4.5	14.0

Source: Tabulations on the 2000 Census of China (Tables 8-1 and 8-4), the National Population Census Office at the National Bureau of Statistics of China.

Table 4
Percent of housing in each zone that is self-built, 2000

	City	Town	County	Total
China	26.8	52.2	93.4	71.6
Beijing	13.3	39.2	87.0	31.2
Tianjin	9.9	65.4	96.2	42.0
Shanghai	14.4	45.6	87.2	26.6
Chongqing	29.8	38.2	92.2	71.8

Source: Tabulations on the 2000 Census of China (Tables 8-1 and 8-4), the National Population Census Office at the National Bureau of Statistics of China.

Building method

Intra-municipality difference in housing quality is also revealed in building method. The share of self-built housing is reflective of the quality of the housing stock. Self-built housing was encouraged in the 1980s and in small cities and townships to mitigate severe housing shortages in urban areas (Zhang, 1996). Although self-build housing can provide shelter for low-income households, they do not always follow the regular building standard and are sometimes lack of basic services such as water, sanitation, and access to roads (Zax, 1997). Self-built housing was also criticized for the lack of planning and coordination.

While self-built housing was still the mainstay in town and county, major city became very stringent in allowing self-built housing (Wu, 1996). As a result, only a small proportion of city housing is self-built, as shown in Table 4. Town is between county and city having about 50% of housing being self-built.

With respect to building method, inter-municipality disparities are as significant as intra-municipality differences. While Chongqing mirrors the national average, the other three municipalities have a much smaller share of self-built housing. Chongqing, as a municipality recently designated the autonomous status, is less developed and more likely to have self-built housing than other more established autonomous municipalities.

Living arrangement and per capita housing space

Although county housing is more likely to be self-built and use inexpensive building materials, it has better living arrangement and bigger per capita housing space than urban housing. Table 5 indicates that county households are less likely to share their home with other families. Sharing housing is more common in city where housing is more expensive and scarce, reflecting the discrepancies between housing supply and demand. Among the four municipalities, Tianjin and Shanghai appear more likely to have their residents to share housing, while residents in Beijing are least likely. In addition, Table 6 shows county residents usually enjoy more per capita housing space than their urban counterparts. Similar to that in the US, city residents on average have smaller housing size. Among the four municipalities, Tianjin has the smallest per capita housing size. Once again, inter- and intra-municipality differences are significant.

Housing constructions

The past two decades saw a huge housing construction boom in urban China. However, differences were evident within municipalities and between municipalities. Fig. 1 compares housing floor space built in different decades. Housing construction in the four municipalities has largely followed the national trend. More than 70% of the existing housing stock in the four

Table 5
Percent of housing in each zone that is shared by more than one family, 2000

	City	Town	County	Total
China	—	—	—	5.9
Beijing	3.4	2.0	0.7	2.7
Tianjin	9.0	4.4	2.6	6.5
Shanghai	7.2	4.9	5.2	6.7
Chongqing	4.5	4.4	3.2	3.7

Source: Tabulations on the 2000 Census of China (Tables 8-1 and 8-4), the National Population Census Office at the National Bureau of Statistics of China.

Table 6
Per capita housing size in each zone, 2000

	City	Town	County	Total
China	—	—	—	22.8
Beijing	19.6	24.1	24.3	21.0
Tianjin	17.2	21.7	21.0	19.1
Shanghai	19.9	33.2	41.8	24.0
Chongqing	22.7	24.5	28.2	26.7

Source: Tabulations on the 2000 Census of China (Tables 8-1 and 8-4), the National Population Census Office at the National Bureau of Statistics of China.

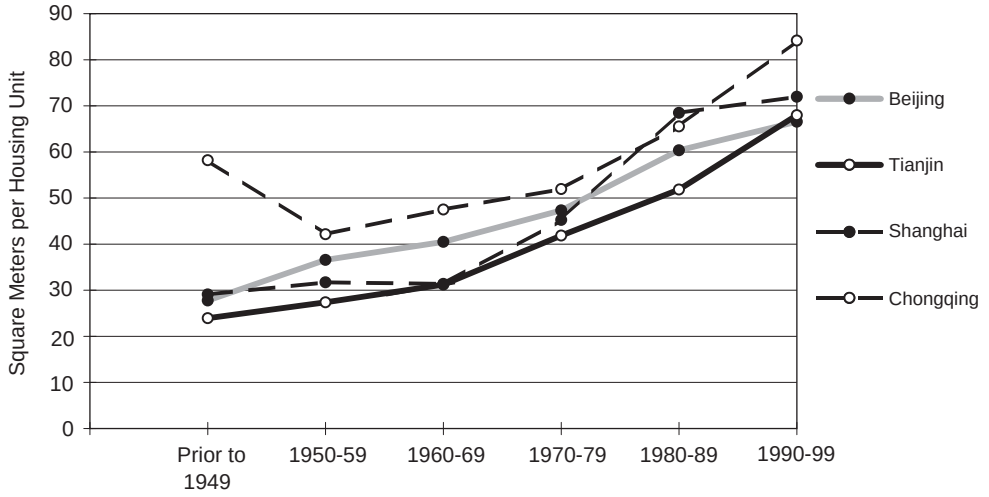


Fig. 2. Average housing size built in different decades. *Note*: Data is for urban area, including city and town.

municipalities and in China was built over the past two decades.[11] More specifically, both Chongqing and Shanghai have seen a rapid growth in housing construction, while the growth rate of housing construction in Beijing and Tianjin was turning flat in the 1990s.

Housing size

Fig. 2 reveals that the average hosing housing size built by decades have also followed a trend similar to housing constructions. Housing built before 1950s has the smallest average size, there is a steady improvement over time. Tianjin appears to have smallest average housing size among the four municipalities. In Tianjin, housing built prior to 1970s has on average only 20–30 m^2 per unit.[12] Comparatively, Chongqing fares the best in average housing size. There are significant inter-municipality differences, which have persisted for several decades.

When we compare the average floor space per urban household between 1995 and 2000, housing space has improved steadily, as shown in Fig. 3. Urban residents on average enjoyed larger housing space over time. This is even more notable in light of rapid urbanization and large in-migration. Tianjin had the smallest floor space per household in both years, despite the large improvement from 1995 to 2000. Based on the analysis so far, housing reform appears to have achieved at least one of its initial goals, which is to spur housing construction and improve housing space for urban residents.

[11]It is notable, however, some new buildings were constructed on existing sites as a replacement of old housing through urban revitalization. This phenomenon is more likely to take place in cities where housing stock is relatively old. New housing is usually much larger in the total floor space than the replaced ones.

[12]Once included rural areas, average housing size increased especially in Chongqing.

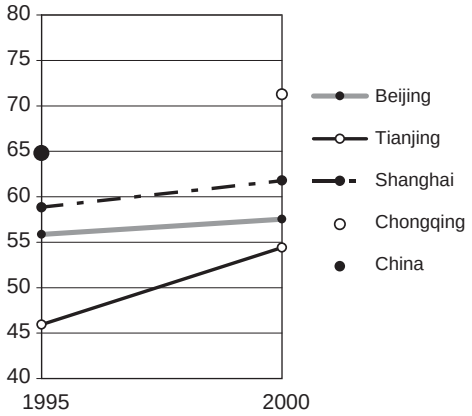


Fig. 3. Average floor space per urban household, 1995–2000. *Note*: Urban area includes city and town. Urban Population denotes urban residents living in areas under the jurisdiction of cities and towns. Data for China is available in 1995 only and data for Chongqing is available in 2000 only.

Housing facilities

The past decade or two have seen a large growth in housing construction and more housing space for urban residents. However, it is unclear whether housing facilities have improved simultaneously. Prior to reform, urban housing was not only plagued by overcrowding and shortage, but also by substandard quality and lack of facilities. Many units did not have private tap water, private toilet, or private kitchen.

Fig. 4 shows the proportion of households that did not have private kitchen, private toilet, or private tap water between 1995 and 2000. For instance, 57% of urban households did not have private toilets, while 34% of Shanghai urban households did not have private kitchens in their apartment flats. Even for Beijing, which fared better than the other municipalities, more than 35% did not have private toilet and 13% did not have private kitchen in 1995. This is not surprising given the well-known housing crunch in both Tianjin and Shanghai.

There were significant regional differences in the availability of housing facilities. Most urban housing units in Shanghai and Beijing already had private tap water in 1995, while about 20% of urban housing in China and in Chongqing were still lack of private tap water in 2000.

Simultaneously with the housing boom and increasing floor space, household facility improved in a significant way. For instance, while more than 55% and 20% of the housing units in Tianjin did not have private toilet and private tap water respectively in 1995, the number dropped by more than 20 percentage points to 32% and 3%, respectively, in 2000. However, the progress was not equally observed in all the urban areas. Beijing, Shanghai, and Tianjin fared much better than the national average.

This section revealed significant inter- and intra-municipality differences in housing quality and living arrangement. Different regional development policy may help explain the differences in the housing quality of the four autonomous municipalities. As a newly designated autonomous municipality, Chongqing has a way to go to catch up the other three municipalities with respect to housing quality. Meanwhile, housing condition has improved significantly over time.

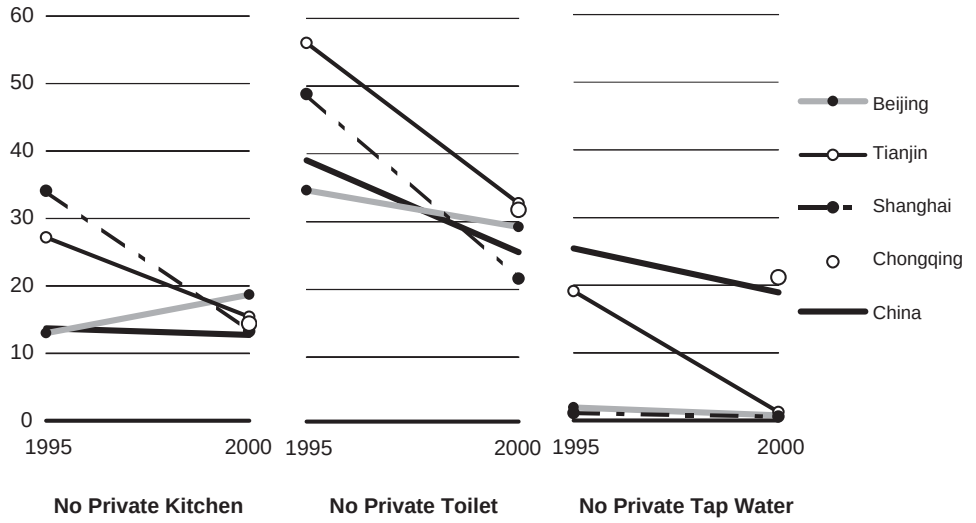


Fig. 4. Percent of urban households without facilities, 1995–2000. *Note*: Data for Chongqing is available in 2000 only.

Housing distributions

Connections between occupational status and educational attainment

Housing distribution has changed substantially and become much more reliant on market forces. However, it is less clear who has gained the most in the housing improvement and whether housing disparity has widened between different populations. The following section examines factors in housing distributions and their changes over time, with a specific focus on the relative importance of occupational status and education.

Occupational status[13] and educational attainment are two measures of social mobility. In most Western countries occupational status and educational attainment have significant correlations. People who have higher level of education usually have more prestigious occupations and attain higher earnings.

[13]According to the National Statistics Bureau of China, there are seven major categories in the occupational status (*Zhiyedalei*) of the 2000 census, which are (1) official/leader of enterprises (This category includes administrator and manager of public, private and not-for-profit organizations. If one has both professional position and official position, he/she is considered as official in the census.), (2) professional/technical (including scientist, researcher, professor, teacher, engineer, technical personnel, medical personnel, airplane and ship captain, lawyer, actor/actress, singer, composer, professional sports player, cultural personnel, and religion personnel), (3) clerical/staff member/management personnel (including postmaster, office personnel, administrative personnel, and management personnel), (4) service worker and worker in the commercial sector (including salesperson, purchase personnel, conductor, cook, tourist guide, repairperson, cleaning personnel, and barber), (5) labor worker in agricultural sector and fishery (including workers in farming, forestry, pasturing, hunting, and machine operator in these areas), (6) production worker (including industrial operator, car driver, shipman, transportation worker and manufacturing worker) , and (7) unstated or not subject to the major categories.

In modern China, however, the connection between educational attainment and occupational status has not always been a positive one. During the Cultural Revolution between 1966 and 1976, a high level of education became a shortcoming instead of merit for most citizens. People with college education were sent away from the city to the countryside and factories. According to official policy, educated people should be "reeducated" in order to reduce their "arrogance" and "cultural gap" with less educated people, while proletarians were given preferential assignment in work units (Tsou, 1986).

While the era of radical treatment of intellectuals has passed, there are still remnants of socialist egalitarianism, especially in the state sector. Wu (2002b) discovered that the effects of education on earnings are still significantly weaker in the public sector than in the private sector. Even in the public sector, returns to human capital are different between high profit work units and low profit work units, and between state employees and city employees (Lin & Bian, 1991; Bian & Logan, 1996).

The connection between occupational status and earnings was also a weak one until recently when the market became more established. Occupational status, related to political capital, was a stronger predictor of housing provision than education. Recent study has shown that, over time, the relative importance of political capital and human capital are converging. These two factors combined together become more potent determinants of high paying and prestigious jobs (Walder, 1995; Dickson & Rublee, 2000).

In housing reform, one vital step was to sell work-unit-owned apartment flats to individual households with a huge discount. People had the option to purchase their current residence with a one-time lump sum discount. The out-of-pocket cost for such a housing reform flat (*fanggaifang*) would only be a fraction of the cost of a comparable commercial flat. With respect to the calculation of the discount price, a set of criteria was considered. The most important factors were seniority and housing conditions with additional adjustment for family size, ranking, and residential location. Neither education nor occupational status was a direct factor in the calculation of the discount. Housing is the most costly consumption good for most households. Therefore, it is important to investigate how the relative importance of education and occupational status has changed in housing provision after the 1998 housing reform.

Occupational status

In the 5 years between 1995 and 2000, per capita housing space[14] increased and crowding was mitigated for all the people. Meanwhile, housing discrepancy became larger for people with low occupational status.

In 1995, people of all walks of life had a relatively small discrepancy in their per capita housing floor space as indicated in Fig. 5. The differences were within 4–7 m^2 per person. Workers usually had the smallest per capita housing space among all occupations while officials and professionals seemed to have a little bit advantage. In addition, officials in Beijing had a larger per capita living space than officials in Shanghai and Tianjin in 1995, which is reflective Beijing's status as the

[14]Housing space refers to actual living space, which does not include kitchen, bathroom, and temporary space.

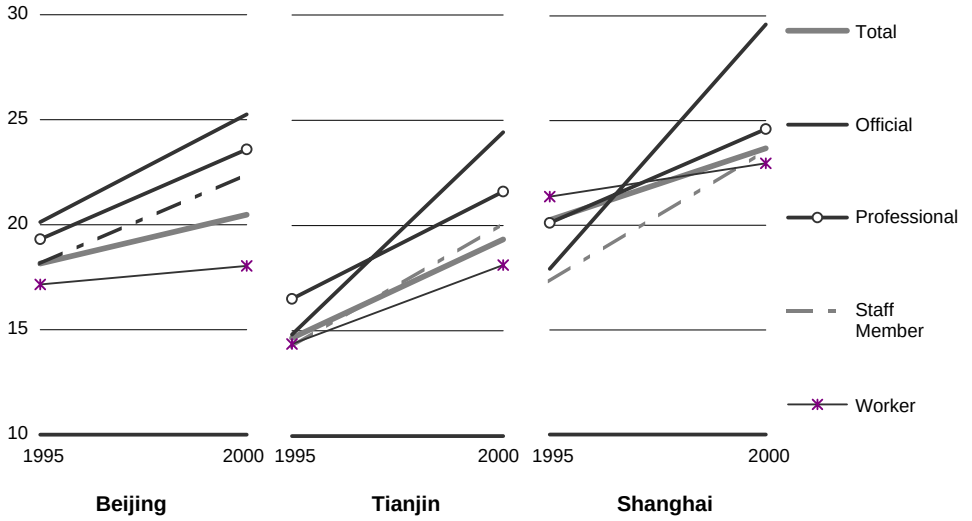


Fig. 5. Changes in per capita housing floor space by occupations in urban areas, 1995–2000.

nation's capital. Officials in Beijing are more likely to work in the state government, which in general have a higher level of welfare benefit than city government.

Over time, people in all occupations enjoyed more housing space in the three municipalities. However, there is a growing difference in housing distribution across occupations. Fig. 5 also shows the changes in per capita housing floor area by occupations from 1995 to 2000. Officials gained the most in the three municipalities.[15] In Shanghai for instance, per capita housing space of officials improved more than 65% from 18 m^2 to almost 30 m^2 in only 5 years. Officials in Tianjin and Beijing experienced a similar improvement in housing space. This increase is particularly drastic given the fact that officials had housing space comparable to, and some times even smaller than, other occupations in 1995. Many state-owned-enterprises and government agencies have to follow the official guidance of wages and salaries, which is controlled by the national government. As non-cash benefit, housing is sometimes a preferred way of welfare benefit in work-units. It is, therefore, not surprising to see that officials had the most significant improvement in per capita housing size. Over time professionals and staff members also had significant gains.[16]

On the other hand, people with low occupational status did not fare as well. For instance, workers had about a 1–3 m^2 increase, while officials had a 5–10 m^2 increase in their per capita housing space. The divergence in housing distribution is evident in all the three municipalities.

Crowding was another prevalent problem in China's urban housing sector prior to housing reform (Huang, 2003). It has been a major goal of housing reform to mitigate the crowding problem, measured by the number of persons per room. Fig. 6 shows that the three municipalities

[15]These three cities were chosen due to data availability and reliability.

[16]It appears that officials are more likely to gain housing space through exercising their power, while professionals are gaining ground due to economic reform. Prior to reform, intellectuals and professionals had a marginal socioeconomic status, and were even subject to reeducation in Mao's era.

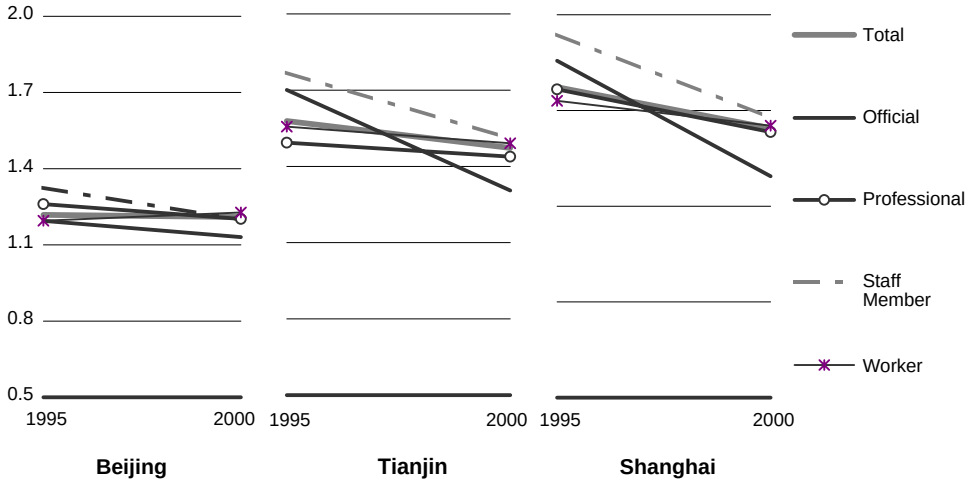


Fig. 6. Changes in persons per room by occupations in urban areas, 1995–2000. *Note*: Data is not available for Chongqing.

experienced less crowding or fewer persons per room over time. While the improvement was more apparent in Shanghai, home crowding was also more significant in Shanghai in 1995. Crowding measure in Beijing did not improve as much as that in Shanghai and Tianjin; but home crowding appeared to be less significant in Beijing. Among all the occupations, officials again had the biggest improvement, while workers had the smallest gain.[17]

Educational status

In additional to occupations, education was also found to be an important determinant in housing distribution. Economic reform has gradually altered the egalitarian distribution system and weighed more on education in income distribution. An increasing number of jobs require college education. People with higher educational attainment have more upward mobility in the housing market than before. Figs. 7 and 8 reflect such trends. While people of different level of education had a relatively small difference in per capita living space, people with college education improved the most in both housing space and the crowding measure. On the other side, people with lower than primary school education had the smallest improvement in their housing. It is evident that occupational status and educational status have become two decisive factors in housing distribution.

While people with high occupational status and educational attainment have improved more rapidly in their housing conditions, it is unclear whether the changes in ownership status have followed the same path.

[17]It is not surprising to see that agricultural workers on average have the fewer persons per room than people in other occupations, since they are more likely to live in the outskirts of the city where land is more available and housing is more likely to be self-built.

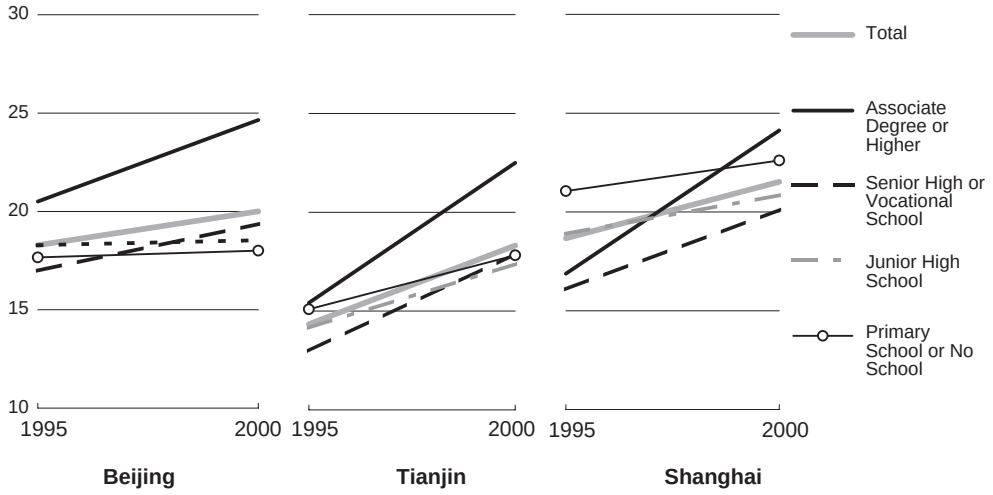


Fig. 7. Changes in per capita living area by education in urban areas, 1995–2000.

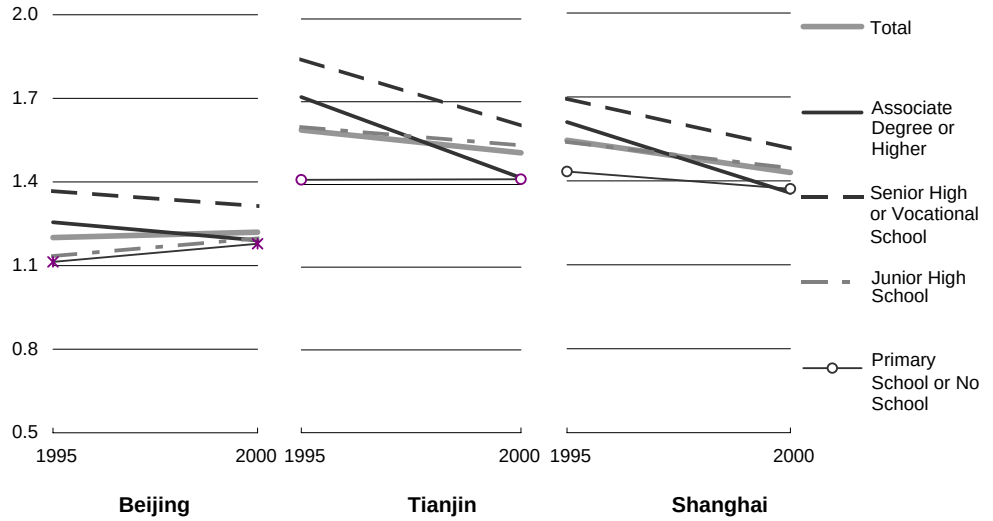


Fig. 8. Changes in persons per room by education in urban areas, 1995–2000. *Note*: Data is not available for Chongqing.

Changing housing tenure structure

Expanding homeownership underpins the success of housing reforms. Past research has shown that ownership status is dependent more on work-unit status than one's occupational status and educational attainment (Li, 2003). Rentership does not automatically refer to lower housing status, as many official preferring rent than owning (Huang & Clark, 2002). This section specifically investigates the changes in homeownership and housing distributions in the late 1990s.

Table 7
Urban homeownership rates by occupations, 2000

	Official	Professional	Staff member	Commerce/service	Agricultural worker	Production worker
Beijing	64.5	62.7	60.6	29.0	33.1	43.2
Tianjin	63.2	61.9	58.2	42.4	69.1	50.0
Shanghai	74.4	70.9	66.8	40.7	38.1	48.5
Chongqing	72.0	62.9	69.9	44.5	62.0	48.4

Source: Tabulations on the 2000 Census of China (Table 8-10), the National Population Census Office at the National Bureau of Statistics of China.
Note: Urban area includes city and town. Urban population denotes urban residents living in areas under the jurisdiction of cities and towns. Owner-occupied housing includes purchased public housing, commercial housing, and affordable housing; renter-occupied housing includes public and private rental housing.

Table 8
Urban homeownership rates by education status, 2000

	Associate degree or higher	Senior high/ vocational school	Junior high school	Primary or no school
Beijing	67.8	50.3	42.8	42.2
Tianjin	60.7	49.8	45.1	41.9
Shanghai	72.3	56.8	46.8	40.7
Chongqing	71.9	61.8	54.4	51.4

Source: Tabulations on the 2000 Census of China (Table 8-10), the National Population Census Office at the National Bureau of Statistics of China.

Table 7 shows that occupation is an important factor in homeownership attainment. Officials had the highest homeownership rates in the four municipalities, while workers appear to have low homeownership rates. People in commerce and service sector had the lowest homeownership rates in almost all the municipalities. The homeownership gaps between officials and service workers range from 20 to 30 percentage points in 2000. Inter-metropolitan differences are also evident. Beijing and Tianjin tend to have slightly lower homeownership, which may reflect their slower pace of housing commercialization.

Level of education seems to be another decisive factor in homeownership attainment. Table 8 reveals that people with college degrees have the highest homeownership rates, while people with less education have lower homeownership. The gaps are between 15 and 25 percentage points.

Figs. 9 and 10 reveal a widening gap in homeownership attainment between occupations and between educational levels. People with higher occupational status and more education have fared particularly well over the past several years in attaining homeownership. Homeownership gaps seem wider in Shanghai than in Beijing. It is particularly notable that officials had homeownership rates rather similar to other occupations; people with college education had homeownership rates even lower than people without college education in 1994.[18] Although it deserves further

[18]Data is from the microdata collected through "The State and Life Chances in Urban China" project (for more information, see Zhou & Moen, 2001).

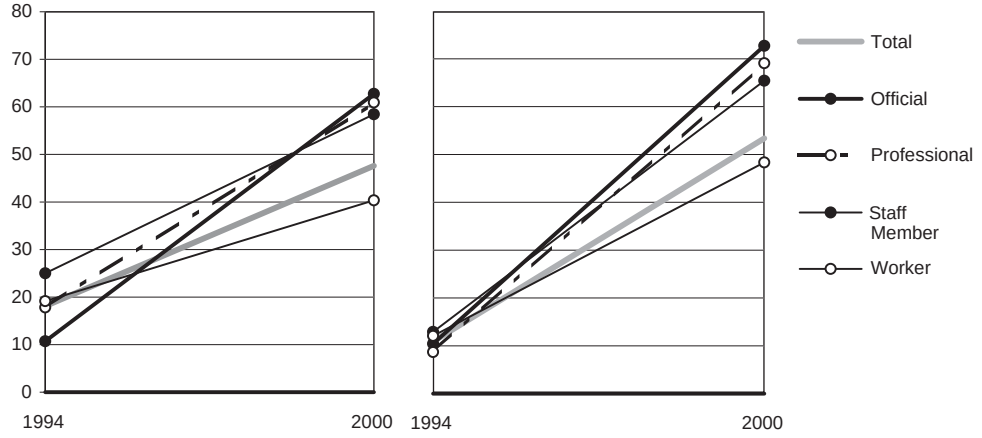


Fig. 9. Changes in homeownership rates by occupations in Beijing and Shanghai (city), 1994–2000.

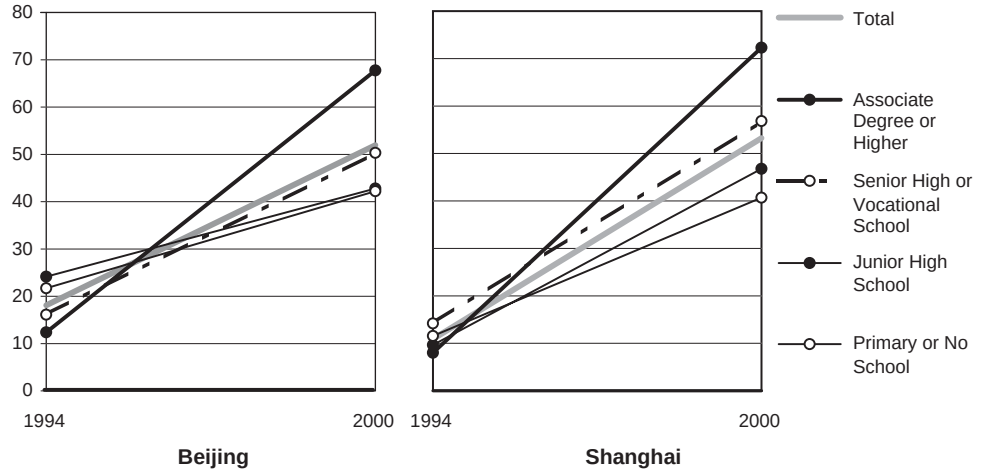


Fig. 10. Changes in homeownership rates by educational status in Beijing and Shanghai (city), 1994–2000. *Source*: Tabulations on the 2000 Census of China (Tables 8 and 7), the National Population Census Office at the National Bureau of Statistics of China; Tabulations on microdata from the 1994 "The State and Life Chances in Urban China" Project (Zhou, Moen, and Tuma, 1994). *Note*: Data is for city only. Data in 1994 is only available for Beijing and Shanghai.

investigation, evidence suggests that officials and highly educated have made the biggest progress in almost all accounts. The gaps grew to 20 to 30 percentage points. Inequality in housing distribution is no longer a hidden phenomenon.

Conclusions

The late 1990s saw a dramatic rise in housing consumption, a substantial improvement in the overall housing conditions, and an upsurge in homeownership throughout urban China. With the

unprecedentedly rich housing data from the 2000 Chinese census, it is an exciting moment to study the burgeoning housing sector. Coupled with the 1995 by-census data and a 1994 household survey, this study for the first time track changes between two points of time, delineating diverging trajectories in housing distribution and consumption.

Rapid changes in the emerging housing market exemplify the dynamics and complexity in economic transformations. On the one hand, housing is a basic human need. Its conditions and accessibilities underpin the legitimacy of the government. At the minimum, the government has the responsibilities to ensure adequate shelters for the disadvantaged. On the other hand, housing as probably the most expensive and durable item in most households, the distribution is going to have significant impact on socioeconomic inequality in China. Homeownership is likely to be a hallmark of the emerging urban middle class, as it will become an increasingly important instrument of investment and wealth accumulation in urban China. Those who did not succeed in this round of reform are going to be in a disadvantaged position for many years to come.

Housing reform in China has been a success in several fronts, as it provided a key support for the national economy, broadened access to urban housing, and transformed housing from a public good to something closer to a commodity. A significant improvement is found in housing condition, housing facility, living arrangements, and floor spaces during the past decade. A large scale housing construction is seen throughout urban China. A rapidly raising homeownership may help the formation of a middle class in urban China. Although it is not fully clear yet how much progress was due to the stark reform measures undertaken, it is clear that housing distribution system has shifted in a fundamental way.

If reform was to dismantle the egalitarian distribution system and reward people according to market signals, this research shows that the success story has two sides. On the one side, housing distribution becomes more reliant upon educational level and occupational status, mirroring the distribution mechanism in a market economy. People with high occupational status and educational attainment have seen large improvement in their housing conditions and living arrangement. Those who were on the other end of the spectrum, however, had almost flat trajectories in their housing improvement. As a result, housing disparities have widened substantially in almost all accounts. Diverging trajectories suggest that such disparity may keep enlarging in the years to come.

On the other side, institutional factors still play a critical role in the emerging market; China's reform still has some remnants of the socialist system. As observed in many other transitional economies, officials or those who were in power in the socialist system have maintained their advantages and reinforced their power in the new system by transferring their political status into a more tangible benefit-housing. Consistent with the finding in studies, such as Huang and Clark (2002), officials were not much different from the rest of the urban residents in their housing conditions in the mid 1990s. The termination of the housing allocation system in the late 1990s, however, has completely transformed the dynamics in the housing distributions. Officials had the most significant housing improvement among all the occupations.

While housing reform was to form a market-based distribution system, reform has also transformed the inequality hidden behind the socialist system and reinforced the advantages of those in power. It is indicated that housing behavior largely reflects institutional affiliations, geographic locations, demographic factor, regional development policy, and the economic reform measures taken place over the past two decades. Facing much uncertainty in economic transition,

people have hard time to fully account for future cost and benefit.[19] Consequently, demographic factors and cohort progress are more pertinent to housing behavior and trajectories of future housing consumption.

While housing reform was successful on several grounds, it neither eased inter-municipality differences nor mitigated intra-municipality gaps in housing conditions. In addition, several issues can be of potential concerns in the future. First, rapid reform may lead to the formation of urban underclass. With reform on household registrations is on the horizon, the state is expected to loose control over rural-urban migration. Rural laborers are going to be in direct competition with urban workers. Urban residents who are low in occupational status and educational level could be particularly vulnerable. Second, if the rise in homeownership follows the current trend, homeownership rate may soon reach its upper limit. The state may have to seek alternatives to sustain economic growth. Third, high homeownership may be problematic without sufficient property rights protections, since ownership transaction could become a contentious issue in the near future. Fourth, without a full-fledged secondary housing market, high homeownership rates may hinder labor mobility in urban areas.

This study provides new empirical evidence on the progress of housing reform in China. Further research should use microdata to specifically investigate the emerging housing market from a cohort longitudinal perspective. Cohort progress marked by distinctive periods is particularly evident in China, as several dramatic shifts in the political and socioeconomic system have taken place in the past decades. These changes are deeply embedded with the well being of each generation. In this sense, cohort longitudinal approach is well suited for capturing these inter-cohort dynamics in the emerging housing market, when there is rarely a point of market equilibrium. In addition, research should pay more attention to the inter- and intra-municipality differences in housing because of the significant heterogeneity in China's emerging urban housing market.

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[19]Few people purchase home from their work-units by "choice." In many of the cases, the purchase decisions are based on opportunities at hand, leadership of the work units, the reform measures at that time, and so on.

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