Heterogeneity and dynamics in China's emerging housing market

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Abstract

China's emerging housing market, as a critical element of ongoing economic reforms, has drawn increasing attention. The complete abandonment of the socialist housing allocation system in the late 1990s has led to profound changes in housing distribution and consumption in urban China. This article, through analysis of Chinese Census 2000 data and other comparable datasets, studies housing trends in China and in its four autonomous municipalities in the late 1990s. It is found that urban housing has improved by almost all accounts, while housing gaps were rapidly widening. Meanwhile, the mechanisms of housing distribution were shifting. Occupational status and educational level became much more decisive factors. Regional disparities are also evident, due in part to differences in the reform measures undertaken. The drastic changes in the housing sector manifest the phenomenal socioeconomic changes due to twenty years' economic reforms. Reform is successful in increasing distributional inequality as a way to introduce market-based incentives and improve productivity. However, those who were in power 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 distribution and residential behavior.

Keywords: Housing distribution; Housing reform; Chinese Census; Beijing; Shanghai; Tianjin; Chongqing

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1. 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 tenure choice in particular (e.g., Zhou and Logan, 1996; Li, 2000). This expanding literature reflects the growing 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 and Hays, 1996; Wang and 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, and Bian, 1999; Fu, Tse, and Zhou, 2000; Li, 2000; Huang and Clark, 2002) and examine housing conditions of disadvantaged people (e.g., Wang, 2000; Shen, 2002; Wu, 2002). 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 U.S. 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 the U.S. housing policy is to improve the housing of the poor, the primary beneficiary of U.S. housing policy is the middle class family (Weicher, 1979). Through homeownership, housing

provides the main investment instrument for American families who can afford to own a home (Megbolugbe and Linneman, 1993; Eggers, 2001). Homeownership has been linked to positive neighborhood benefits such as, property upkeep, public safety, school quality, and the like (e.g., Green and White, 1997; Rohe, Van Zandt, and McCarthy, 2002). Hence, the U.S. government has made homeownership a centerpiece in the policy agenda, persistently promoting homeownership through various public programs and tax incentives (e.g., The Bush Administration, 2002).

Residential development and homeownership attainment have taken on an added importance in China, as it is not only a stimulus to the economy but also a symbol of economic progress in urban China. For instance, 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, improve economic efficiency, and reduce the government's burden of urban housing. Meanwhile, the implicit goal was to create an urban middle class and stabilize the society by encouraging people to own a piece of property. Subsequently, the State Council decided to terminate welfare allocation of housing throughout the country and fully abandon the old housing allocation system[1] (Kou, 1998; Li, 1998). Therefore, creating a housing market and promoting homeownership have been a vital element of broad economic reforms (Wang and Murie, 1996).

[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).

Housing reform becomes, in a sense, a one-time deal to materialize the "merit, need, and seniority" credit that one has accumulated through the years of service in the socialist work-units (*Danwei*) into homeownership. Few people refused such an opportunity, given the proposed hike in rent on the horizon. Consequently, homeownership rate in urban China shot up sharply at the end of the 1990s, from about 30 percent in 1995 to more than 70 percent in 2000. Housing construction also reached a new record high (see Figure 1). This is 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 is 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.

[Figure 1 about here]

The aim of this study is to analyze housing trends over time and across regions, delineate diverging trajectories in homeownership attainment and housing distribution, and examine the factors behind the phenomenal rise in homeownership rates and housing consumption in the late 1990s. 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 also argues that one's housing behavior largely reflects his/her institutional affiliations, geographic locations, demographic factor, 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[2]. Consequently, demographic factors and cohort progress are more pertinent to housing behavior and trajectories of future housing consumption.

This article proceeds as follows. First, it provides an overview of the housing reform in China and a survey of recent literature. Second, it analyzes regional differences and urban-rural disparities in housing quality and living arrangement. The next section of the article looks into the rising housing consumption over the late 1990s. Specific topics include housing facilities, living arrangement, housing floor space, and home crowding. This is followed by an analysis of trends in homeownership and housing distributions over time. The housing sector will be examined at both the national level and the regional level for comparably defined geographic units. Finally, the article will look at consequences and implications of the emerging housing market.

2. Urban housing reform and emerging housing market in china

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 accommodation. The state owned most urban land and monopolized land transactions since 1949. Homeownership and private property rights were virtually vanished since the late 1950s. Housing distribution was largely based on merit,

[2] 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.

seniority, and need. The nominal rent charged was so low that, since the mid 1950s, it would 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 concern for revenue or returns. Under this system, government 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 and Lee, 1990). Ironically, as a result the low income and egalitarian policy, housing became the biggest chuck of lifetime welfare payment for most urban residents. The allocation was always a very contentious process.

The state was reluctant to invest in urban housing, since housing was deemed "non-productive" (Zhang, 1996). While housing was often the most important benefit from the state, urban residents as renters were less willing to up keep their housing. Housing shortages, substandard quality, and lack of basic facilities were some of the common problems plaguing urban housing sector. For instance, urban per-capita living space decreased from 4.5 square meters in the early 1950's to 3.6 square meters in the late 1970's (National Bureau of Statistics of China, 2001a). Pent up demand was evident throughout urban China. The problem became even more

acute when a large number of youth returned to the cities from years of reeducation in the countryside in the late 1970s. The problem of shortage was not unique to the housing sector; it exemplifies the failure of the broad economic system.

2.1. 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 recognized 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-based 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 and only as a supplement to the planned economy in the beginning (Tsou, 1986). Because of the economic importance and symbolic value of the urban housing sector, the government was very cautious and conducted various experiments and pilot studies. As a result, the first stage of reform was devoted to invigorating the old housing system instead of establishing a real housing market[3] (Tolley, 1991; Lim and Lee, 1993; Wang, 1995).

Due to high inflation and the political instability in the late 1980s, housing reform was stuck in an impasse[4]. While housing conditions improved steadily and total urban housing floor space expanded two fold over the decade (see Figure 1),

[3] This in part reflects government concerns over alienating their urban constituents who are in a strong position in China's political power structure.
[4] It seems that the government was reluctant to carry out any drastic measures, fearing urban residents would stand against the government as they did in the summer of 1989.

housing reform failed to shift the burden of housing development to private sector or establish a functional housing market. Few policies provided incentive for private or other forms of housing development. The public sector has kept the leading role in housing construction (Liu, 1991). Private housing comprised approximately 18.7 percent of total housing floor area in 1990, which did not change significantly from 17.7 percent in 1982.

Although nominal rent kept rising steadily each year in the 1980s, actual rent[5] did not. Because of inflation and a rapid increase in real income of urban workers, housing burden[6] in urban areas declined precipitously from 1.93 percent of household income in 1978 to 0.74 percent 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 percent 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; Chen, 1996c).

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 and Gao, 1993). Work-units and local governments 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). Given the soft budget constraints, work-units would prefer keeping ownership and allowing their

[5] It denotes rent adjusted for inflation.
[6] It denotes the share of household expenditure on housing in the total household expenditure.

employees to pay a nominal rent so that they can exercise more controls over their employees. By providing low-cost housing, work-units can also maintain a comparative advantage to their competitors in the private sectors. Consequently, the public sector had continued and even expanded the hidden non-monetary compensation to those living in urban rental housing.

Rural residents, on the other hand, have experienced a rapid increase in housing expenditure. Household expenditure on housing rose from 3.2 percent in 1978 to 12.9 percent in 1990 (Chen, 1996b). Housing gaps expanded between rural and urban areas in the 1980s. However, rural residents in China were not eligible for urban housing benefits. Their movement was strictly restricted by residency registration (*Hukou*). Significant discrepancies exist between urban and rural areas in building quality, public service, and infrastructure. It is particularly difficult to migrate to major urban areas such as Shanghai and Beijing where high paying jobs are more abundant and infrastructure is better built.

2.2. 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 percent of the average household income by the end of 1995 (Zhang, 1996). Urban residents

enjoyed more housing space over time. In addition, an estimated 30.5 percent of urban housing became privately owned (Zhang, 1996). However, such progress was uneven. The larger the proportion of government agencies and state owned enterprises in one region, the slower the housing reform process seemed to be. For instance, by the end of 1995, owner-occupied housing comprised only about 18 percent and 15 percent of the housing stock in 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 percent of the urban housing was privately owned.

Nevertheless, the overall progress was below the goal set by the 1994 plan (Kou, 1998). Reform faced more passive resistance in major cities such as Beijing and Tianjin. Therefore, Premier Zhu and the new State Council took stark measures in 1998 to privatize public housing, establish private property ownership, and make the market as the sole means of housing distribution (Zhu, 2002).

3. Recent studies

Recent studies were more concerned with the consequences of housing reform on distributional equality (Lee, 2000; Wang, 2000), on social and spatial arrangement (Wang and Murie, 2000; Hu and Kaplan, 2001), and on housing affordability (Rosen and 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, and Zhou, 2000; Huang and 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) revealed that rentership did not necessarily imply inferior socioeconomic status. Instead, many officials chose to rent instead of own, since renting was less costly for them. Many local governments and state-owned-enterprises were reluctant to privatize their housing stock.

Despite a large number of studies, few have looked into the changing dynamics of the emerging housing market, regional differences in homeownership attainment, and housing heterogeneity between urban and rural areas[7]. 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 the housing reform process.

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? Who has gained and who has lost in

[7] The definition of urban and rural areas is subject to academic discussion (see, for example, Zhou and Ma, 2003). Geographically, provinces and municipalities are consisted of cities, towns, and counties. Based on residency registration, people are separated between rural and urban residents. While counties have only rural residents and cities (urban districts) only have urban residents, many newly established districts (part of municipality) have both urban and rural residents. In this analysis, urban population, following the definitions from the National Bureau of Statistics of China, refers to urban residents who are under the jurisdiction of cities and towns.

housing reform? How much difference is there across regions and between rural and urban areas? 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.

4. Data—1995 mini Census and 2000 Census

Perhaps due to the lack of data, empirical studies lag behind the rapid residential development and the profound changes in housing tenure structure currently taking place in China. There has not been any publicly available nationally representative data[8] on housing quality until the 1995 one percent Mini 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 one percent Mini-Census and a survey conducted in 1994. Data collected at two time points allow analyzing housing trends over the late 1990s. The 1995 Mini Census[9] covering one percent of China's total population is the first experiment of National Bureau of Statistics of China to collect data on housing at the national level. The Mini Census has a reliable coverage for urban areas (National Bureau of Statistics of China, 1996). To compare with the 1995 Mini Census, the 2000 Census is a full-scale census. The 2000 Census provides the most

[8] 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.

[9] According to the information provided by the National Bureau of Statistics of China through the International Monterey 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 Mini Census was October 1, 1995.

comprehensive coverage for China's housing to date. 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 urban housing conditions.

5. 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 directly under the control of the central government and enjoy a special status in the national government. The municipal governments have considerable freedom in development strategies and market reforms. In the year 2000, these four autonomous municipalities live about 6.5 million people or 5.5 percent of China's population while producing 11.5 percent of the nation's GDP (Gross Domestic Product). These four municipalities, except Chongqing, have a much larger share of college graduates and a higher level of urbanization than the national average. (See Table 1.)

[Table 1 about here]

[Map 1 about here]

These four largest municipalities, as cultural and political centers of China, serve as economic engines of the region. Beijing, located in the northwestern part of

the country, is the capital city of China. Beijing has a large number of government agencies and state-owned-enterprises, having relatively slow reform. State owned units employed more than 40 percent of the workforce, which is more than three times of the national average. (See Table 1.)

Tianjin is a costal city located to the southeast of Beijing. Tianjin used to be a shinning star in the era of industrialization. The city having a large number of state-owned-enterprises faces difficulties in invigorating its economy.

Shanghai, 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. 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). Shanghai was the most populated municipality in China, before Chongqing became an autonomous municipality six years ago.

Chongqing, located on the upper reaches of the Yangtze River in the hinterland of China, was recently designated the autonomous status in 1997. Compared to the other three municipalities, Chongqing has a much larger rural population (Han and Wang, 2001). Only 9 percent of the work force was employed by the state owned units, which is even below the national average of 12.5 percent (see Table 1. National Bureau of Statistics of China, 2001a).

These four municipalities are in different stages of economic development, having different demographic compositions. Beijing is the intellectual center with almost 17 percent of the population having college education or 13 percentage points

higher than the national average. Chongqing on the other hand has only 2.8 percent of the population as college graduates. The low education level in part reflects the large share of rural population in Chongqing. Only 33 percent of the population in Chongqing is urban resident, while more than 70 percent 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 is the only autonomous municipality that lost population to out-migration in 1990s.

All of the four municipalities experienced population growth. Population in Shanghai and Beijing grew by more than 25 percent over the 1990s, while Chongqing only saw a moderate 7 percent absolute growth (see Table 1).

The four municipalities except Chongqing have per capita income much higher than the national average. Shanghai and Beijing have the highest per capita urban income in China, which is about 70 percent higher than that in Chongqing (see Table 1. National Bureau of Statistics of China, 2001a). Housing is also more expensive in Beijing and Shanghai. While 50 percent of housing in Beijing and 44 percent of housing in Shanghai are higher than the national average, only 24 percent of housing in Chongqing is above the national average[10].

[Table 2 about here]

[10] Almost 34 percent of housing in China is above the national average cost of urban housing, which is about ¥30,000 in the year 2000.

6. Regional differences and urban rural disparities

6.1. Building materials and living arrangement

There are clearly rural and urban 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 building type in urban China. Table 3 shows that city housing is more likely to use steel and concrete as building material. Rural housing is more likely to use wood, bamboo, and grass. Meanwhile, there are significant differences between municipalities. While housing in Shanghai is more likely to rely on steel and concrete, housing in Tianjin is least likely.

[Table 3 about here]

Rural and urban difference in housing quality is also revealed in building method. As shown in Table 4, the vast majority of rural housing is self-built. In comparison, only a small proportion of urban housing is self-built. While self-build housing can provide adequate 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. The less privileged ones are more likely to inhabit self-built housing (Zax, 1997). The share of self-built housing in a way reflects the quality of the housing stock. Further, regional differences are evident in building method. While Chongqing mirrors the national average, the other three municipalities have a much smaller share of self-built housing.

[Table 4 about here]

Although rural housing is more likely to be self-built and use inexpensive building materials, it provides better living arrangement than urban housing. Table 5 indicates that rural households are less likely to share their home with other families. Sharing housing is more common in urban areas 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 share housing. Residents in Beijing are least likely to share housing. In addition, Table 6 shows rural residents usually enjoy more per capita housing space than their urban counterparts. Similar to that in the U.S., urban residents on average have smaller housing size. Among the four municipalities, Tianjin has the smallest per capita housing size.

[Tables 5 and 6 about here]

6.2. Housing constructions

The past two decades saw a huge housing boom in China. However, differences were evident between rural and urban areas and between municipalities. Figure 1 compares housing floor space built in different decades. Housing construction in the four municipalities has largely followed the national trend. More than 70 percent of the housing stock in the four municipalities was built over the past two decades[11]. More specifically, both Chongqing and Shanghai have seen a

[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

rapid growth in housing construction, while the growth rate of housing construction in Beijing and Tianjin was turning flat in the 1990s.

[Figures 2 about here]

6.3. Housing size

Figure 2 reveals that the average hosing housing size built by decades have also followed a trend similar to housing constructions. Housing built before 1950s saw the smallest average size, with a steady improvement over time. Tianjin appears to have smallest average housing size among the four municipalities, which housing built prior to 1970s has on average only 20 to 30 square meters per unit[12].

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

[Figure 3 about here]

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.

6.4. 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.

Figure 4 shows the proportion of households that did not have private kitchen, private toilet, or private tap water between 1995 and 2000. There are 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 percent of housing in China and in Chongqing is still lack of private tap water in 2000. Simultaneously with the housing boom and increasing floor space, household facility has improved in a significant way. For instance, while more than 55 percent and 20 percent of the housing units in Tianjin did not have private toilet and private tap water respectively in 1995, the number dropped more than 20 percentage points in the five years to 32 percent and 3 percent 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.

[Figure 4 about here]

7. Housing distributions

Housing distribution has changed substantially and became 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.

7.1. Occupational status

People in all occupations have enjoyed more housing space over time. However, there is growing inequality in housing distribution between occupations. Figure 5 shows the changes in per-capita housing floor area by occupations from 1995 to 2000. Officials[13] gained the most in the three municipalities[14]. In Shanghai for instance, per capita housing space of officials improved more than 65 percent from 18 square meters to almost 30 square meters in only five 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 lower than, other occupations in 1995. Professionals and staff members also had significant gains[15]. On the other hand, people with low occupational status have not fared well. For instance, people in the

[13] Officials are those in managerial position, working for the National Government, the Communist Party, and State Owned Enterprises.
[14] These three cities were chose due to data availability.
[15] 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.

commerce and service sector had little increase in their housing space. The divergence in housing distribution is evident in all the three municipalities.

[Figure 5 about here]

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 decrease the number of persons per room. Figure 6 shows that the three municipalities 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 people in the commerce and service sector had the smallest gain[16].

[Figure 6 about here]

7.2. Educational status

In additional to occupations, level of education was also found to have close association with housing distribution. Economic reform has fundamentally changed the egalitarian distribution system and put a much higher value on education. An increasing number of jobs require college education. People with higher educational attainment have more upward mobility in the labor market than before. Figure 7

[16] 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.

and 8 reflect such trends. People with associate degree or higher improved the most in both housing space and crowding measure. On the other side, people with no formal education or just 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 over time.

[Figures 7 and 8 about here]

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.

7.3. 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. This section specifically investigates the changes in homeownership and housing distributions in the late 1990s.

Table 7 shows that occupation is an important factor in homeownership attainment. Officials have the highest homeownership rates in the four municipalities, while workers appear to have low homeownership rates. People in commerce and service sector have 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. Regional differences are also evident. People in Beijing and Tianjin tend to have lower homeownership.

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.

[Tables 7 and 8 about here]

Figures 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[17]. Although it deserves further investigation, evidence suggests that officials and highly educated have made the biggest progress in almost all accounts. Inequality in housing distribution is no longer a hidden phenomenon.

[Figures 9 and 10 about here]

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

8. 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 Mini 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 of 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, achieving homeownership would be a hallmark of the emerging urban middle class. Those who did not succeed in this round are going to be in a disadvantaged position for many years to come. The progress in China's housing reform holds important lessons for other transitional economies.

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 facility, living arrangements, and floor

spaces in just five years. A large scale housing construction is seen throughout 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 article shows that the success story has two sides. On the one side, housing distribution becomes much more reliant upon educational level and occupational status, mirroring the distribution mechanism in a typical market economy. People with high occupational status and educational attainment have seen unprecedented improvement in their housing conditions and living arrangement. Those who were on the other end of the spectrum, however, have experienced almost flat trajectories in their housing improvement. As a result, housing disparities have widened substantially in almost all accounts.

On the other side, institutional factors still play a critical role in the emerging market; China's reform bears a distinctive hallmark 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 form—housing. Housing distribution in 1995 is rather consistent with the finding in Huang and Clark (2002) by which officials were not much different from the rest of urban residents in their housing conditions in the mid 1990s. However, the late 1990s has

seen a very different housing distribution system. Officials had the most significant housing improvement among all the occupations.

While housing reform was successful on several grounds, it neither eased regional disparities nor mitigated urban-rural gaps in housing conditions. Several additional issues can be potential concerns in the future. First, rapid reform may lead to a formation of urban underclass. As reform on household registration is under way, the state is expected to loose control over rural-urban migration so as to mitigate existing urban-rural discrepancies, further improve productivity, and allow more rural people to enjoy the benefit of economic reform. 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 other alternatives to sustain economic growth. Third, high homeownership may be problematic without sufficient property rights protections. 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 differences within metropolitan areas. As rapid urbanization is underway, internal heterogeneity is emerging in urban China.

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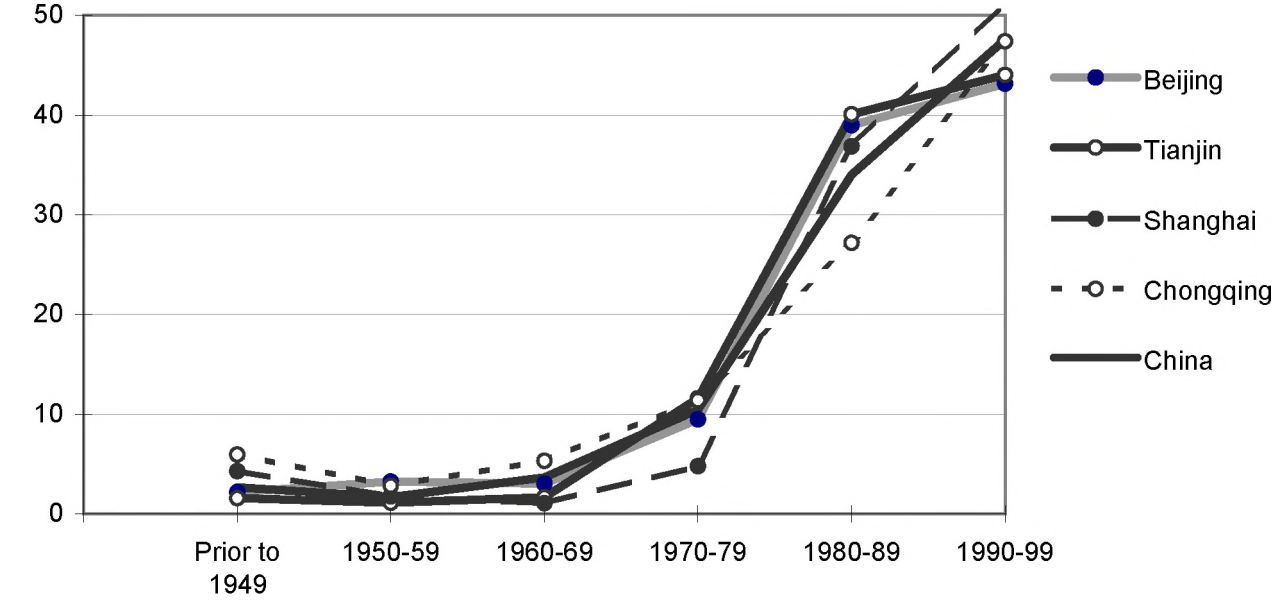
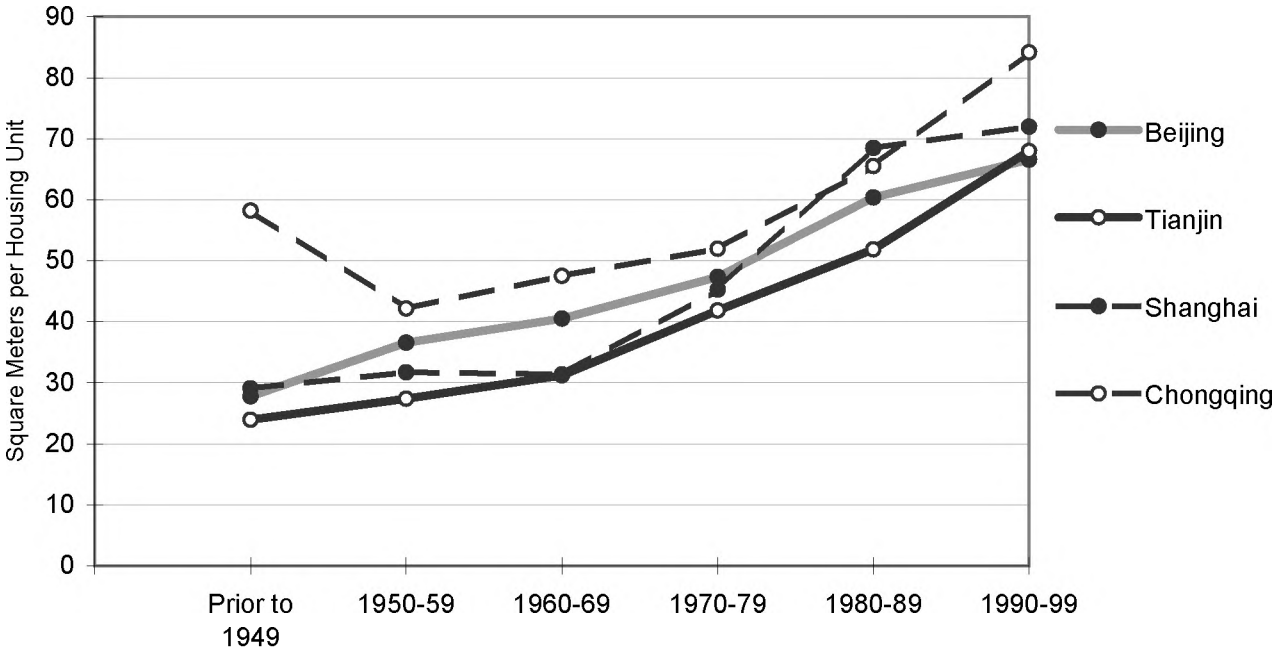
Map1. Selected Cities in China

Figure 1. Percent Share of Housing Floor Space Built in Different Decades



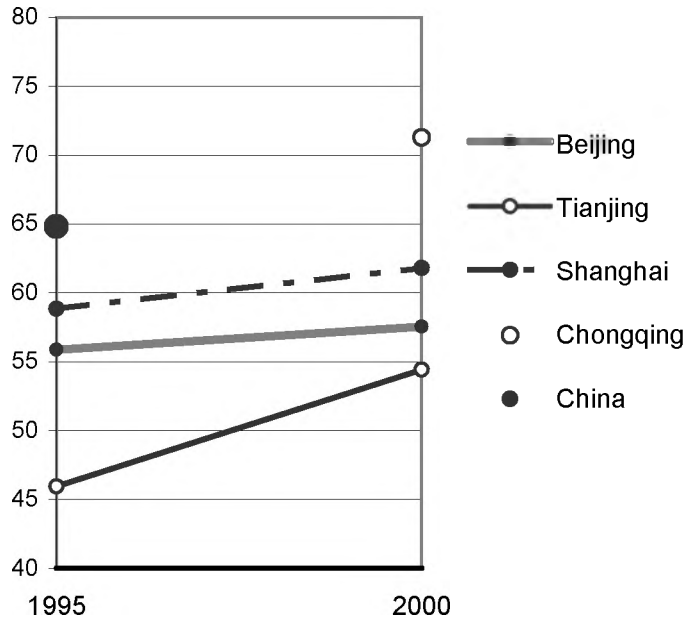
Note: Each point = the floor space built in each decade / the total floor space of that location.

Figure 2. Average Housing Size Built in Different Decades



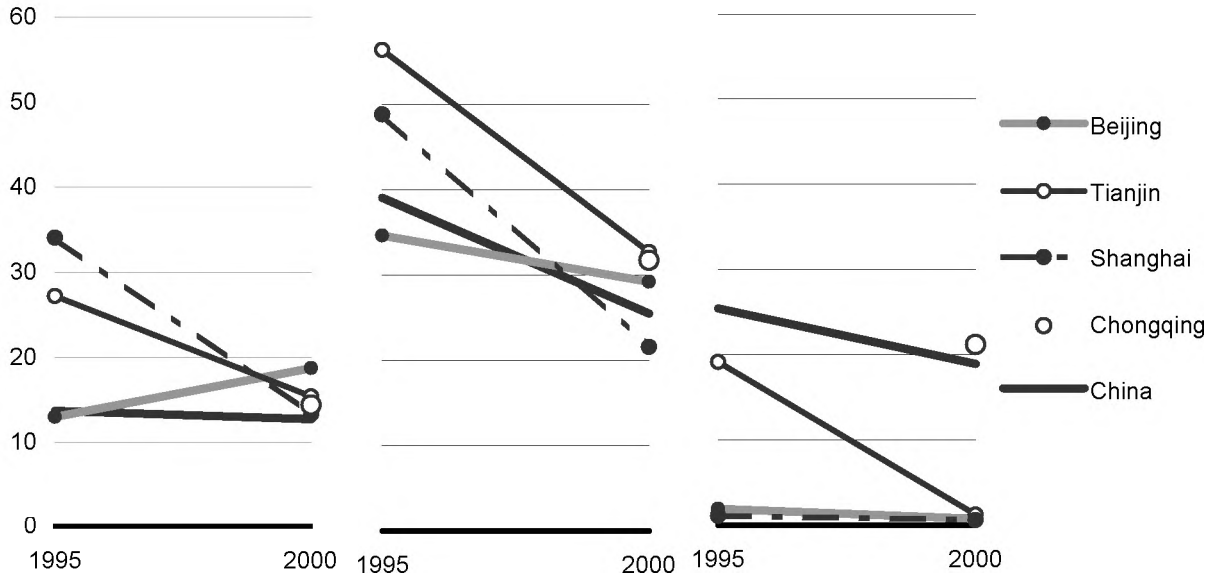
Note: Data is for urban area, including city and town.

Figure 3 . Average Floor Space per Urban Household, 1995 to 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.

Figure 4. Percent of Urban Households Without Facilities, 1995 to 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 Chongqing is available in 2000 only.

Figure 5. Changes in Per-capita Housing Floor Space by Occupations in Urban Areas, 1995 to 2000

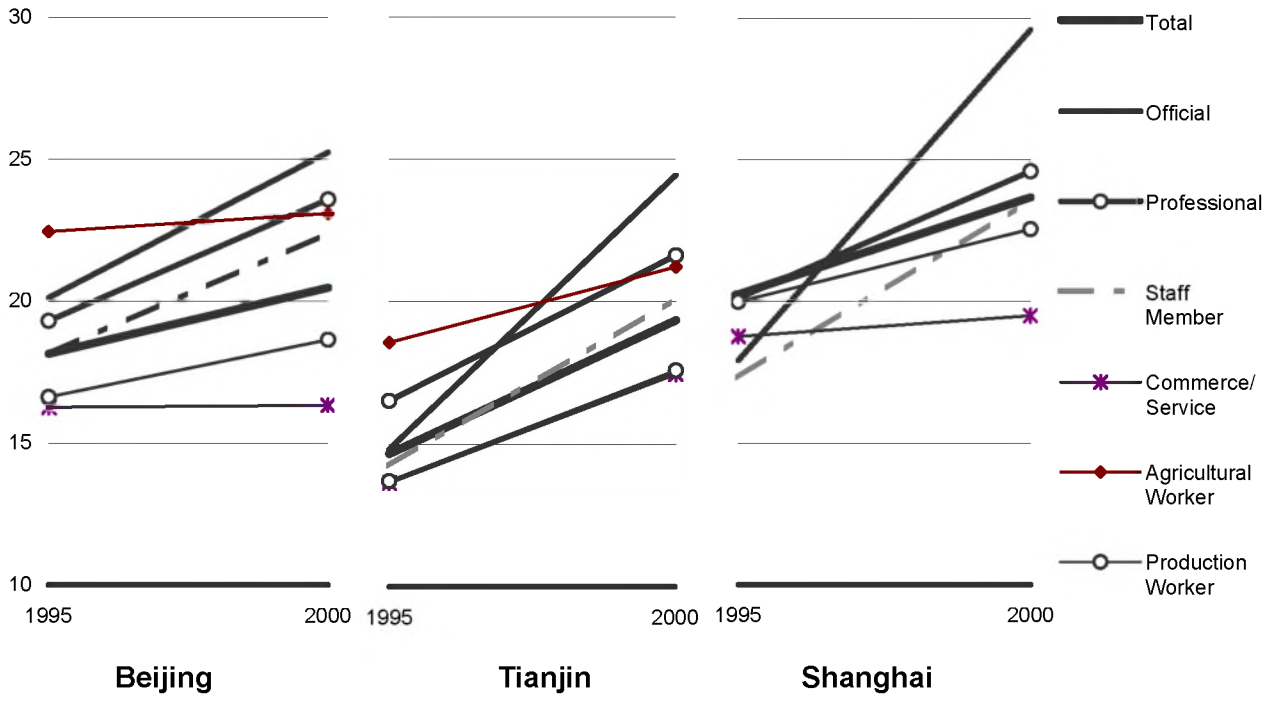
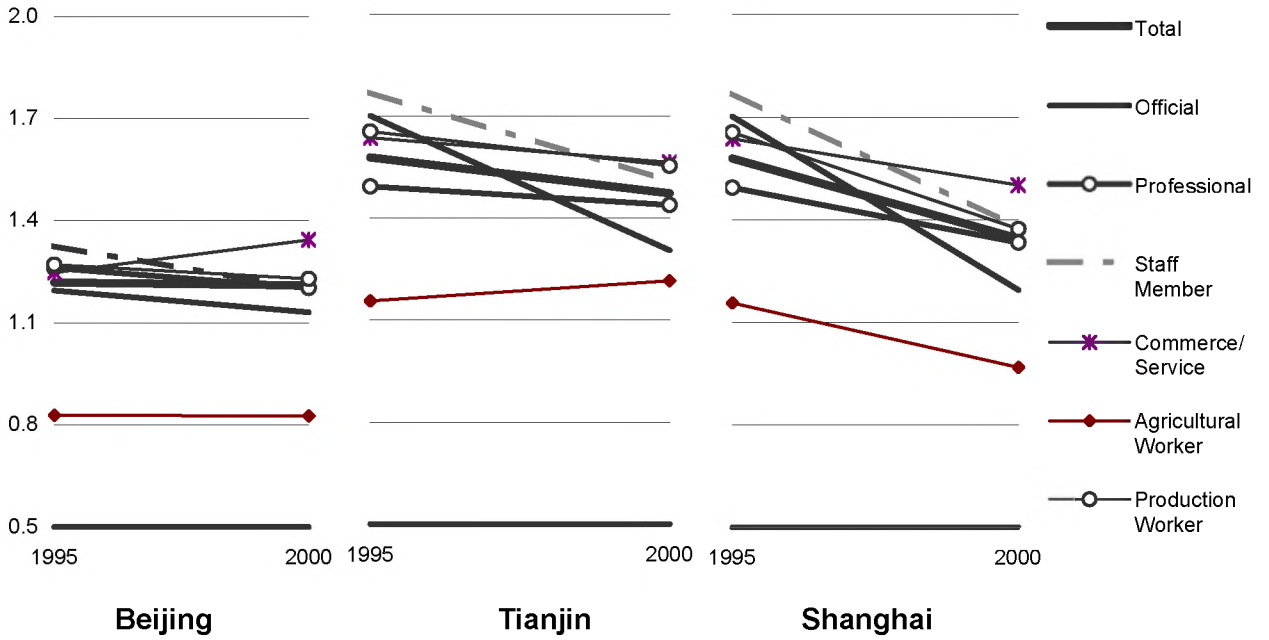


Figure 6. Changes in Persons per Room by Occupations in Urban Areas, 1995 to 2000



Note: Data is not available for Chongqing.

Figure 7. Changes in Per-capita Living Area by Education in Urban Areas, 1995 to 2000

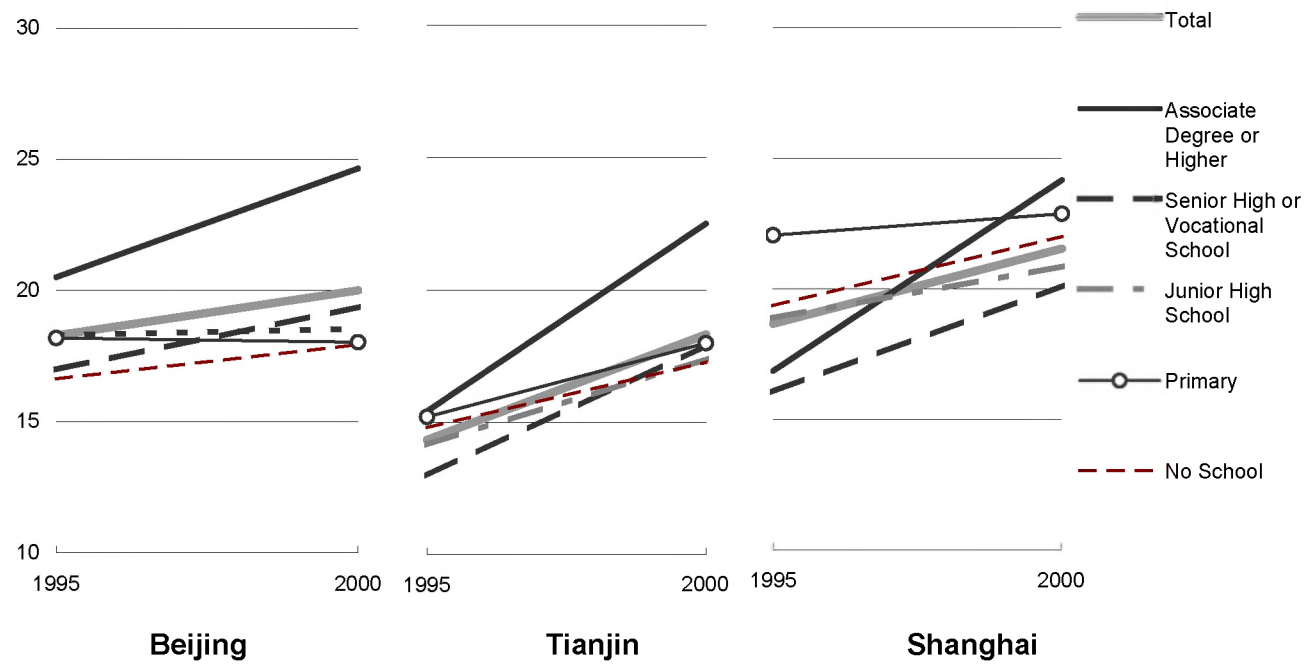
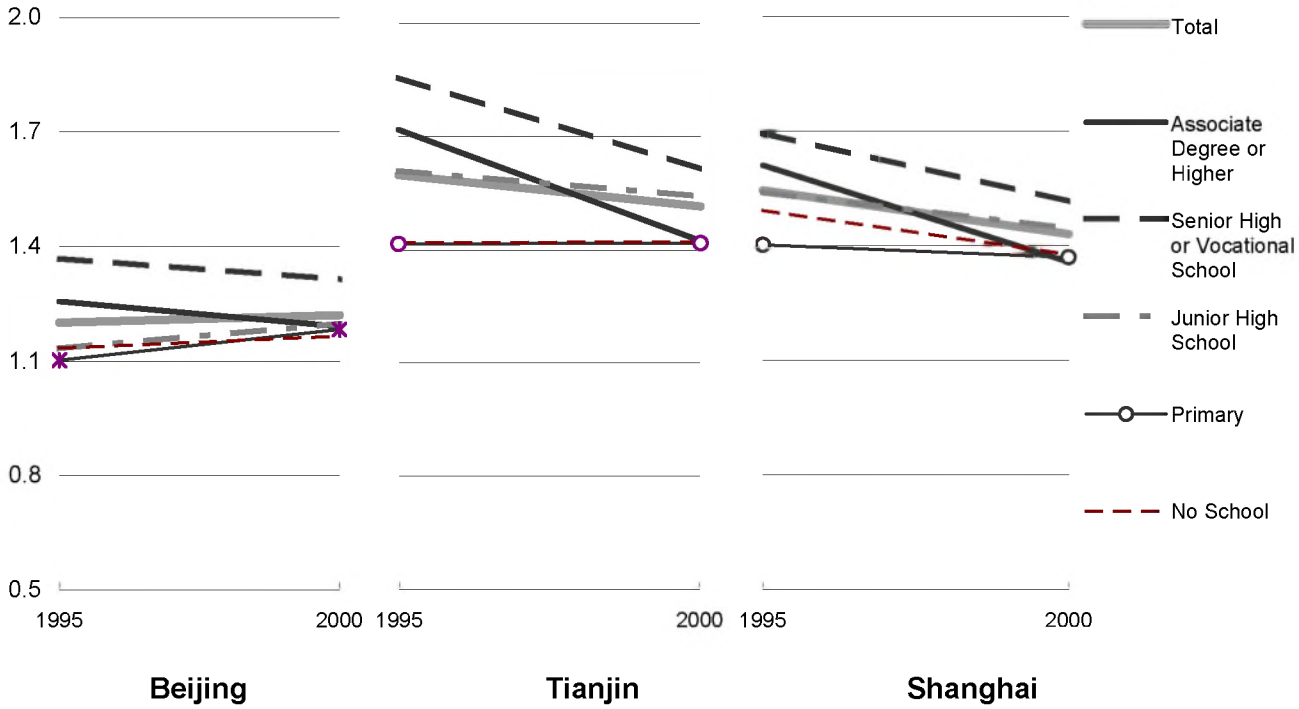


Figure 8. Changes in Persons per Room by Education in Urban Areas, 1995 to 2000



Note: Data is not available for Chongqing.

Figure 9. Changes in Homeownership Rates by Occupations in Beijing and Shanghai (City), 1994 to 2000

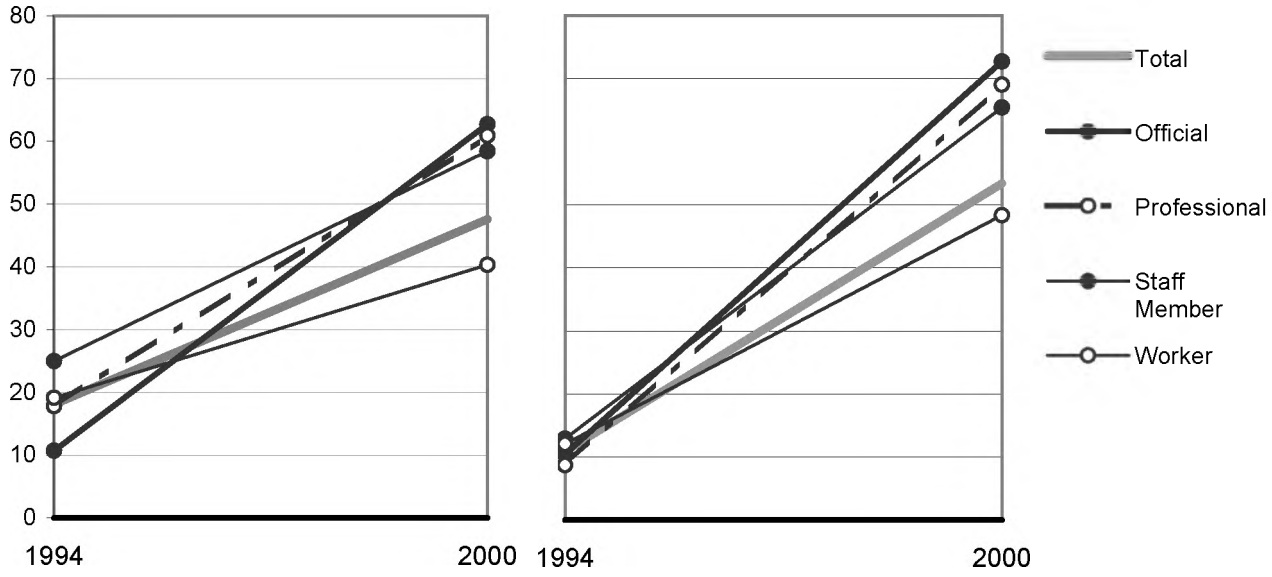
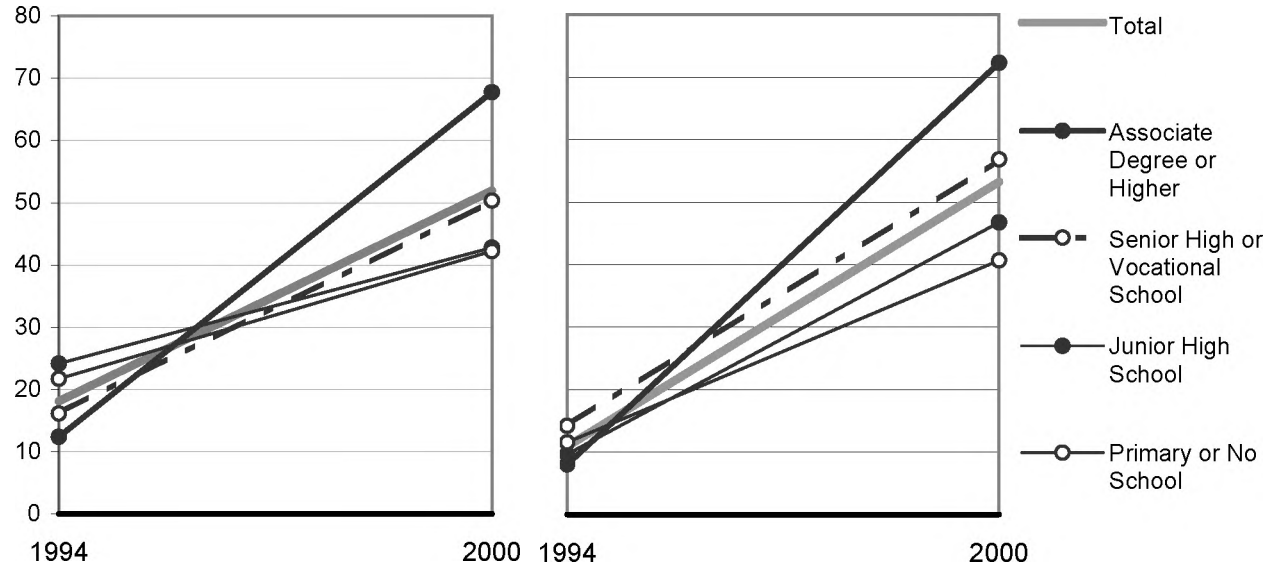


Figure 10. Changes in Homeownership Rates by Educational Status in Beijing and Shanghai (City), 1994 to 2000



Beijing **Shanghai**

Source: Tabulations on the 2000 Census of China (Tables 8-7), 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.

Table 1. Population Growth*, Population Compositions, and Employment in China and the Four Autonomous Municipalities

	Population			2000			
	1990	2000	% Growth	% College Graduates **	% Urban Population* **	% of Employed Persons Work in State-owned Units	Per Capita Annual Disposable Income of Urban Residents****
China	**1133.7**	**1295.3**	**14.3**	**3.6**	**36.2**	**12.5**	**6,280**
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	8,141
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	6,276

Note: * In millions

** Associate degree or higher

*** Population living in areas under the jurisdiction of cities and towns.

**** Chinese Yuan

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

Table 2. Inter-province Migration based on Place of Usual Residence, 1985 and 1990

	Migration during 5-year Period			
	Out	In	Balance	% of the Population
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

Table 3. Percent of Housing in Each Urban 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**

Table 4. Percent of Housing in Each Urban 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**

Table 5. Percent of Housing in Each Urban 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**

Table 6. Per capita Housing Size in Each Urban 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

Note: Geographically, provinces and municipalities are consisted of cities, towns, and counties. In other words, city, town, and county represent different part of the municipality. Based on residency registration, people are separated between rural and urban residents. While counties have only rural residents and cities (urban districts) have only urban residents, many newly established districts (part of municipality) have both urban and rural residents. In this analysis, urban population, following the definitions from the National Bureau of Statistics of China, includes urban residents who live in both cities and towns.

Table 7. Urban Homeownership Rates by Occupations, 2000

	Official	Professional	Staff Member	Commerce/Service	Agricultural Worker	Production Worker	**Total**
Beijing	64.5	62.7	60.6	29.0	33.1	43.2	**49.6**
Tianjin	63.2	61.9	58.2	42.4	69.1	50.0	**53.3**
Shanghai	74.4	70.9	66.8	40.7	38.1	48.5	**55.4**
Chongqing	72.0	62.9	69.9	44.5	62.0	48.4	**55.4**

Source: Tabulations on the 2000 Census of China (Tables 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.

Table 8. Urban Homeownership Rates by Education Status, 2000

	Associate Degree or Higher	Senior High/Vocational School	Junior High School	Primary or No School	**Total**
Beijing	67.8	50.3	42.8	42.2	**51.9**
Tianjin	60.7	49.8	45.1	41.9	**48.9**
Shanghai	72.3	56.8	46.8	40.7	**53.2**
Chongqing	71.9	61.8	54.4	51.4	**58.5**

Source: Tabulations on the 2000 Census of China (Tables 8-7), the National Population Census Office at the National Bureau of Statistics of China