RESEARCH   **Open Access**

Housing inequality in urban China: the heritage of socialist institutional arrangements

Changchun Fang[1]* and John Iceland[2]

* Correspondence:
njuccf@nju.edu.cn
[1]Department of Sociology, Nanjing University, 168, Xianlin Avenue, Nanjing 210023, China
Full list of author information is available at the end of the article

Abstract

With the development of the market economy in China, does the effect of the original socialist institutional arrangements on social inequality fade? We examine this issue by considering the effect of people's positions in the work unit system and their socioeconomic status on patterns of housing inequality in urban China. Using individual-level data from the 2007 Household Survey on the Housing Conditions of Urban Residents in Nanjing, China, we find that although people's socioeconomic status (measured by household income and householder's education) has become very important in shaping people's housing outcomes in urban China, housing inequality is also determined to some extent by their position in the work unit system—such as being employed in various units within the state sector—before and during the housing reform process. The pattern of housing inequality in urban China indicates that the impact of socialist institutional arrangements on social inequality can still be found in market transition societies even years after the market transition has occurred.

Keywords: Housing inequality, Socialist institutional arrangements, Work unit system, China, Market transition

Introduction

In socialist societies, social inequality is structured in large part by government-managed redistributive mechanisms (Szelenyi 1978). During the period of the planned economy, the work unit (*danwei*) system played an important role in the redistribution of resources in urban China. It was the foundation of urban management and the basis for a distinctly socialist strategy of governance (Bray 2005). Work units provided not only jobs and earnings but also a wide array of goods and services for employees and their families (Bian 1994). In general, work units in China could be divided into four major groupings: (1) the private sector, (2) the collective sector, (3) state enterprises, and (4) state institutes and agencies (Lin and Bian 1991). The work unit system was a hierarchical system, since "the resources that a work unit could offer to its employees were contingent upon its structural position in the socialist hierarchy"(Wu and Xie 2003). During the period of the planned economy, state institutes and agencies and state enterprises (both of which are state owned) usually received priority in resource allocations. State employees and their families were typically advantaged not only in terms of salary, but also housing, children's

schooling, health care, pensions, and even access to commercial services (Bian 1994; Lin and Bian 1991; Lu and Perry 1997; Walder 1988; Xie and Wu 2008).

With the development of the market economy in *market transition countries*, has the power of this hierarchy faded in shaping patterns of inequality? Or does it still exert a powerful force? Some researchers have argued that market-oriented reforms have weakened redistributive efforts and changed the opportunity structure (Nee 1989). However, others have argued that former institutional arrangements, including the work unit system in market transition countries, have had a lasting effect on the nature and contours of inequality (Bian and Logan 1996; Lin 1995; Oi 1992; Parish and Michelson 1996; Rona-Tas 1994; Walder 1995). Most of these studies were conducted in the 1990s, and since the start of the twenty-first century, the situation of China has changed. For example, reforms of state-owned enterprises in the late 1990s have had far-reaching effects, such as eliminating lifelong tenure for workers in state-owned enterprises. In addition, the manner in which most welfare benefits and related services are delivered, including the provision of housing by the work unit, has been reformed, such that these services are now provided to a greater degree by the market or other social organizations (Gu 2001; Lee 2000; Wang et al. 2005). Thus, the private sector has expanded dramatically.

These trends lead us to ask the following two questions that guide our analysis: do socialist institutional arrangements, in the form of a household's work unit, still affect the kind of housing to which people have access? And, given the growth of the market system and the private sector, does socioeconomic status (consisting of income and education) have an important effect on housing outcomes today? To gain insight into this issue, we examine the effect of these two factors—a household's position in the socialist system and its socioeconomic status—on patterns of housing inequality in urban China. Specifically, using individual-level data from the 2007 Household Survey on the Housing Conditions of Urban Residents in Nanjing, China, we investigate the association between homeownership status, the type of housing in which a household lives, and housing quality (size of unit)—our three dependent variables—and a household's work unit status (such as being employed by the government/party organization or by the private sector) and socioeconomic status.

This study contributes to the literature in three ways: (1) previous studies of the effects of the market transformation on households in China have paid more attention to the persistent effects of socialist institutional arrangements on people's incomes rather than on housing outcomes, in part because data on the latter have not been as readily available (Huang and Jiang 2009); (2) previous studies concerned with housing inequality in China focused mainly on people's housing situation at the beginning stage of China's housing privatization reforms, and less so after their full implementation. A new analysis is much needed, given the likely long-term effect of these far-reaching reforms; and (3) we focus on more housing outcomes (tenure, type of housing, and quality of housing) than most previous studies.

Literature review and research hypotheses
Market reforms and growing inequality
Income inequality has continued to increase in many countries in recent years, and it has also been much more conspicuous in post-socialist countries—such as in Central

and Eastern Europe—since the 1990s (Mitra and Yemtsov 2007). It seems likely that market-oriented reforms have contributed to these increases in income inequality. As for China, income inequality has increased continuously in tandem with market-oriented reforms (UNU-WIDER 2008). In early 2013, the director of China's National Bureau of Statistics announced that China's Gini coefficient had reached 0.47 (Zhou 2013) and other scholars estimate that the Gini coefficient is actually higher than this (Wang 2010; Wang 2013).

Market-oriented reforms have also affected housing quality and distribution. On the one hand, the residential conditions of China's urban inhabitants have improved significantly since the implementation of housing reforms. The per capita usable floor space for urban residents was 6.7 m^2 in 1978, increasing to 32.7 m^2 in 2011 (National Bureau of Statistics of China 2012). On the other hand, there is considerable concern that these improvements have not been shared equally. Sato's analysis on data collected in the China Household Income Project (CHIP2002 and CHIP2007) shows that per capita housing wealth for registered urban residents was 4.5 times that for rural residents in 2002, while by 2007, this ratio had increased to 7.2. Thus, the Gini coefficient of household housing wealth increased from 0.63 in 2002 to 0.67 in 2007 (Sato et al. 2013). Related studies have also confirmed that housing inequality both reflects and has exacerbated broader economic inequalities (Chen et al. 2008; Huang and Jiang 2009; Li 2002; Xin 2007; Ye et al. 2010) and social problems caused by housing inequality, such as residential segregation (Feng and Zhou 2008; Huang and Jiang 2009; LI et al. 2004; Liao et al. 2012; Shen and Qiu 2008; Yang and Wang 2010) and urban poverty (Wang 2000).

Determinants of housing inequality

Housing inequality is an important aspect of social inequality in modern societies, and housing tenure (ownership) is often used as measure of housing attainment (Bell 1977; Drudy and Punch 2002; Elmelech 2004; Lux et al. 2013; Osborn and Morris 1979; Rex and Moore 1969). How then does housing inequality emerge? Perspectives often used in studies of western market economies focus on the importance of socioeconomic (SES) and demographic factors. Home ownership is a form of consumption and investment, such that housing tenure can be explained by variables measuring the difference in people's SES, housing market characteristics, and housing prices (Clark et al. 1994; Clark et al. 1997; Henderson and Ioannides 1989). In addition, family size, family structure, and life cycle factors might also affect housing attainment.

In contrast to the functioning of market economies, in China, people's housing outcomes were determined by socialist institutional arrangements during the period of the planned economy, and the work unit system was an important part of this arrangement. In the period before market reforms, most urban housing in China was constructed through capital investment funds channeled by the state directly to state-owned work units or local governments (Bray 2005), and then allocated to employees by work unit or local government. During that period, overall levels of housing inequality were modest, as housing was seen as a fundamental right for urban workers. However, this does not mean that housing inequality was nonexistent. Housing allocations were determined mainly by national policies (Huang 2003) which took into account people's current housing condition, family size, seniority, party membership, level

of position, and professional title, to name a few important factors (Bian et al. 1996; Logan et al. 2009; Logan et al. 1999). Of key importance is that one's work unit played a critical role in the distribution of housing, since housing was allocated mainly by the work unit. According to the first national survey of housing stock in 323 cities in 1985, work-unit housing comprised 75% of total housing, while housing managed by the municipal housing bureau comprised only 9% of the total (Wu 1996). Because the work unit played a large role in the provision and allocation of housing, the difference between work units, such as the nature, size, and the administrative level of the work unit, undoubtedly influenced people's housing conditions.

Housing reforms in China started at the beginning of the1980s and extended through the 1990s. These reforms generally changed the responsibility for attaining housing from the state to the individual in order to reduce the government's financial burden, such as by raising the rent of public rental housing. The final set of reforms, implemented beginning in 1998, and the core content of this wave of reforms, was to stop the housing allocation process by selling all housing owned by work units and local governments and developing the private housing market [see also Bray 2005]. This wave of reforms in China was similar to reforms adopted in Central and Eastern Europe and proceeded on two tracks: privatization of public housing and development of a new private housing sector (Logan et al. 2010). These two tracks have been described as "dual markets," as they involved the internal (state-controlled) market and a new open market (Sato 2006; Shiming 1998). In the internal market, public houses were sold at a discounted price; these practices were typically widespread during the first stage of housing reforms in most transitional countries. For example, a study of housing in Budapest showed that in 1990, 35% of the total housing stock was sold to their original tenants at a discount of 35–40% (Hegedüs and Tosics 1994).

Because of the existence of the internal market, people's housing situations depend not only on their income and related resources but also—and in fact mostly—on their position in the pre-reform system (Logan et al. 2010). Studies on Central and Eastern Europe indicate that people in important government positions in the pre-reform system had the opportunity to buy high-quality public housing at a very low price (Kosareva and Struyk 1993; Pickvance 2010). This initial process of housing privatization in most post-socialist countries, such as Russia, Serbia, and Poland (Yemtsov 2007), has thus been termed by some as "give-away privatization," a policy that aggravated the level of housing inequality that was already present to some degree during the socialist period (Buckley et al. 1995; Lux et al. 2013).

The practices in Central and Eastern Europe, to varying extents, illustrate the lingering effects of socialist institutional arrangements and highlight the importance of path dependency. As for China, during the process of the privatization of public housing, seniority, party membership, level of position, and professional title all helped privileged people obtain discounted housing (see Sato 2006). The impact of the work unit system in particular on housing privatization was also very strong. In the internal market, the work unit sold the housing it controlled to its employees. The amount of housing the work unit had at its disposal was usually determined by the work unit's administrative rank and the role it played in national economic and social development. As a result, housing inequality arose across groups of people who were employed in different work units. In addition, market-oriented reforms initiated at the beginning of the 1990s

provided work units with more autonomy, and this increased the economic differences between different work units, which also increased housing inequality. Those work units that performed well within the new market-focused economic system were better able to improve their employees' housing conditions (Bray 2005; Li 2006). Moreover, during the process of housing reforms, many housing units in the market were actually purchased by work units and then re-assigned as welfare housing for their employees (i.e., sold to their employees at a price lower than the market price), while only a small proportion of them were actually purchased by individual residents (Chen et al. 2008). In short, because of the existence of institutional inertia and path dependence, the reform process created opportunities and benefits for those who were better positioned on the social ladder under the communist regime (Huque 2005) and the winners in the housing reform process are likely those who were favored in the previous system (Huang and Jiang 2009; Huang and Yi 2011; Logan et al. 2009; Logan et al. 2010).

Most of the research cited above on housing inequality in urban China is based on data collected only at the beginning of the 1998 housing reform process and provides a picture of housing inequality in China at the beginning stage of housing privatization reforms. We use data from several years later (2007), after privatization reforms were fully implemented and the housing market had been established. For example, in 2007, 82% of urban households owned their homes (Huang and Yi 2011), up sharply from just 24% in 1990 (Bian et al. 1997). Thus, it is essential to conduct a new analysis of the state of housing inequality in urban China, as it could be that institutional factors no longer influence housing tenure and housing quality. Several studies have used more recent data. Fu (2014), for example used data from China's 2005 1% National Population Sample Survey in his research, but he focused mainly on the relationship between land finance and housing stratification. While Chen (2015) used recent data collected in Guangzhou, China, to explore the effect of institutional factors on housing-tenure, she highlighted the heterogeneity in housing-tenure among just three groups ("urban elites," "native plebeians," and "lower masses"), probably due to the relatively small size of the sample. While all of these studies are informative, we go beyond them by examining whether the patterns of housing inequality in urban China have changed after nearly 10 years of intensive housing privatization using data collected from a large sample in Nanjing in 2007; we also use data with information on a variety of housing outcomes and also multiple indicators of socioeconomic status and work unit. These data allow us to provide a more refined picture of the extent of housing inequality and the factors that have contributed to it.

In short, because of the existence of institutional inertia and path dependence described above which likely advantages those who were better positioned on the social ladder under the communist regime, we hypothesize that people's work status still affects people's housing outcomes, though socioeconomic status also likely has an independent effect, especially in the commercial housing market.

Data, variables, and method

For our study, we use data collected in the 2007 Household Survey on the Housing Conditions of Urban Residents in Nanjing, which is the capital of Jiangsu province in Eastern China. There are three reasons why we choose Nanjing as an example for China: (1) the 1998 housing reforms were implemented in a similar manner across

most cities in China, and the rate of private home ownership in Nanjing was close to the average rate in urban China in 2007. Specifically, according to our sample, the private home ownership rate in Nanjing in 2007 was 79.3%, very close to the national average of 82% in the same year. Thus, privatization has proceeded at the same pace in Nanjing as in the rest of in urban China; (2) Nanjing is a large city [with a population of more than seven million in 2007 (Statistic Bureau of Jiangsu 2008)] with many different types of work units, which ensures sufficient variability in one of our key independent variables; and (3) this household survey conducted in Nanjing has both a large sample and information on a variety of housing outcomes not available in the census or many other small-scale surveys. The Nanjing survey was administered to 62,430 households and covered the whole area of Nanjing (including three newly merged districts—suburban and rural areas—and eight urban districts). We focus on eight urban districts and select cases that meet the following conditions: (1) the householder's[1] household is registered in a local non-agricultural district and (2) the householder is an adult who is not in school or retired.[2] Our sample, after applying these restrictions, consists of 18,150 households in Nanjing. We omit people living in non-urban districts because the land system and housing system for non-urban areas differ considerably from those systems for urban areas.

Our analysis focuses on the association between housing outcomes and work unit status and people's socioeconomic status. We examine three housing outcomes: home ownership, type of housing, and size of housing. Home ownership is a simple dichotomous variable indicating whether household members own their home or not. Type of housing includes:

Housing type I: housing owned by the household, which includes:

I-a: Commercial housing (*shanpin fang*). This is housing bought from the open market.

I-b: Middle- and low-price commercial housing/affordable housing (*zhong di jia shanpin fang/jingling shiyong fang*). At the beginning of the housing reform period, such housing was usually owned by the work unit and then sold to its employees at a cheaper price. Soon afterwards this kind of housing was usually sold by local government at discount price to impoverished families or households relocated by urban renewal/land acquisition.

I-c Housing obtained as part of the housing reform (*fanggai fang*). This refers to housing bought from the work unit or local government during the process of housing privatization and thus clearly originates from the internal housing market.

Housing type II: housing that is not owned by the household or the ownership cannot be identified, which includes:

II-a: Public housing rental (*gong zu fang*). This is rented housing which is owned by the work unit or local government.

II-b: Original private housing (*yuanyou si fang*). Since the ownership of some of this kind of housing cannot be identified in the survey, and as we know, most of this type of housing was built on non-state-owned land (maybe collectively owned land) or housing without title deed or land certificates, we treat this kind of housing as non-owned housing.[3]

II-c: Private housing rental. This is rented housing owned by private owners.

II-d: Other housing that is not owned by the household. This includes housing owned by the military or borrowed housing from the private or public sector.

While these categories do not have a clear rank ordering, home ownership is generally valued above renting and middle- and low- price commercial housing and housing obtained as a part of the housing reform (the second and third categories listed above) represent housing obtained through the internal market rather than the private market. Our final outcome is size of housing, as measured by per capita living area (the unit of measurement is square meter).

Socialist institutional arrangements are mainly measured by householder's work unit status, using the following categories: employed in the government or party organization, employed in public institutions, employed in state-owned enterprises, employed in collectively owned enterprises, employed in private/other enterprises, self-employed laborer, and unemployed. The second indicator is whether the family received housing subsidy during the housing reform process. Its values include one-time housing subsidy, monthly housing subsidies, and no subsidy. Generally speaking, households with strong institutional connections were more likely to receive subsidies during the reform period. Since work unit and housing subsidies result from institutional arrangements, for brevity, we refer to these two variables as "institutional factors."

We measure people's socioeconomic status with two indicators: householder's level of education and household income per capita. Finally, our models also control for age of the householder (since only working-age adults are in our sample, we do not include an age-square term in our models) and family structure. Based on the original survey, the family structure variable includes the following categories: three generations in the household, two generations in the household, household with only one generation present (a couple), single person household, and all others (the final category refers to unusual family structures not covered by the other categories and comprises only 0.8% of the total sample). In some models, we interact age with state-owned sector, as it could be that older householders might have benefited more from working in that sector.

We begin the analysis with descriptive statistics of the sample and the main variables in our analysis (see Table 1). Since home ownership is a dichotomous variable, we then estimate a binary logistic regression that examines the association between home ownership and the independent variables described above. This is followed by a multinomial regression predicting the type of housing (a variable with seven categories), and finally, we use linear regression with people's housing area per capita (a continuous variable) as the dependent variable of interest.

Results

Table 1 indicates that 79.32% of households owned their home in Nanjing in 2007. This high rate of homeownership is indicative of the fact that housing market reforms had largely been implemented by 2007. Another noteworthy phenomenon shown in the table is that 50.5% of homeowners obtained their housing through the housing reforms, and another 10.2% of them own middle- and low-price commercial housing. This indicates that a large percentage (just over 60%) of housing property was originally obtained through the internal market described above, even though the open market is now fully functional by 2007. Thus, because such a significant proportion of housing was purchased in the internal market, we can deduce that nearly 10 years after the 1998 housing reforms, patterns of housing inequality were likely still associated with

Table 1 Description of variables

	Frequency	Percent (all cases)	Percent (families who own housing)
Home ownership			
Housing is owned (I)	14,396	79.32	–
Housing is not owned (II)	3754	20.68	–
Total	18,150	100.0	–
Classified type of housing			
Commercial apartment (I-a)	5647	31.11	39.23
Middle- and low-price commercial apartments (I-b)	1473	8.12	10.23
Housing obtained during housing reform (I-c)	7276	40.09	50.54
Total	–	–	100.00
Public house rental (II-a)	1824	10.05	
Original private house (II-b)	421	2.32	–
Private house rental (II-c)	550	3.03	–
Other housing not owned (II-d)	959	5.28	–
Total	18,150	100.0	
	Mean	Std. deviation	Valid *N*
Living area (per capita)	28.92	19.67	18,150
Householder's education	12.58	3.00	18,150
Householder's age	43.14	9.43	18,150
Family income (10 thousand)	4.804	5.47	18,150
Family income per capita (10 thousand)	1.83	2.13	18,150
	Frequency	Percent	
Household head's work unit			
Government/party organization	1305	7.19	
Public institution	2509	13.82	
State-owned enterprise	5800	31.96	
Collectively owned enterprises	1145	6.31	
Private enterprises	4481	24.69	
Self-employed laborer	1342	7.39	
Unemployed	1568	8.64	
Total	18,150	100.00	
Housing subsidies			
One-time subsidy	2128	11.72	
Monthly housing subsidies	1377	7.59	
No subsidies	14,645	80.69	
Total	18,150	100.00	
Family structure			
3 generations in household	1549	8.53	
2 generations in household	12,379	68.20	
1 generation (couple) in household	2692	14.83	
Other type	142	0.78	
1 person household	1388	7.65	
Total	18,150	100.00	

the housing reform process and the housing allocation system that existed prior to the housing reforms. The following multivariate analysis will test this proposition. Table 1 also shows descriptive statistics for all of the variables in our analyses.

Table 2 shows the comparison of housing among families with householders employed in different labor sectors. It indicates that housing tenure varies considerably across householders' work units. Housing types I-a, I-b, and I-c are three kinds of owned housing, and the cumulative percentages indicate the difference in housing ownership among different families. For example, 88.2% of families with a householder employed by the government or party organization own their housing, while the percentage for families where the householder is unemployed is 63.5%. The percentages of families with a householder employed in public institutions, state-owned enterprises, collectively owned enterprises, private enterprises, and self-employed laborers are 86.2%, 82.6%, 73.9%, 76.5%, and 76.3%, respectively. The result of Table 2 also shows differences in housing types among those families who owned their homes, and families with a householder employed in state-owned sectors are clearly the most likely to have obtained their housing during the housing reforms.

Table 3 shows results of logistic regressions where homeownership is the dichotomous dependent variable. The results indicate that institutional factors and socioeconomic status (as well as most controls) are significantly associated with ownership. In Table 3, "state-owned sector" (working sector for householder, 1 = "yes," 0 = "No") was used as predictor in model 1, and interaction of "state-owned sector" and "householder's age" was added in model 2. Model 1 indicates that state-owned sector is positively associated with ownership of housing, with the odds of a family owning a home when the householder is employed in the state-owned sector 33.6% ($e^{0.29} = 1.3364$) higher than the odds among families with the householder employed in non-state sectors. The result in model 2 shows that the effect of labor sector is moderated by the householder's age, with older people benefiting more from working in state-owned sectors. Model 3 uses the type of the householder's work unit as a predictor, and the results indicate that after controlling for other variables, state-owned sectors, such as public institutions and state-owned enterprises, have a positive association with home ownership. The odds that a family with a householder employed by (a) the government or party organization or (b) institution owning a home are16.2% ($e^{0.15} = 1.1618$) and

Table 2 Type of housing among families with householder employed in different labor sectors (%)

	Type I-a	Type I-b	Type I-c	Type II-a	Type II b-d	All type I	All type II
Government or party organs	39.62	2.91	45.67	3.45	8.35	88.20	11.80
Public institutions	34.00	3.63	48.51	5.98	7.89	86.13	13.87
State-owned enterprises	25.10	4.62	52.86	10.19	7.22	82.59	17.41
Collectively owned enterprises	20.09	9.61	44.19	15.46	10.66	73.88	26.12
Private/other enterprises	36.51	12.30	27.72	9.57	13.90	76.53	23.47
Self-employed laborer	49.40	11.55	15.35	7.45	16.24	76.31	23.69
Unemployed	18.62	16.58	28.25	21.17	15.37	63.46	36.54
Total	31.11	8.12	40.09	10.05	10.63	79.32	20.68

$N = 18,150$, Pearson chi-square = 2370.89, df = 36, $p = 0.000$
Note: Type I: housing owned by the household; Type I-b: middle- and low-price commercial housing/affordable housing; Type I-c: housing obtained as part of the housing reform; Type II-a: public housing rental; Type II b-d: original private housing/private housing rental/other housing that is not owned by the household

Table 3 Logistic regression results of home ownership (owned vs. not owned)

	Model 1	Model 2	Model 3
Intercept	− 0.78*** (0.16)	− 0.34+ (0.18)	− 0.67*** (0.17)
Householder's age	0.01*** (0.00)	− 7.1e−05 (0.003)	0.01*** (0.00)
Householder's education	0.08*** (0.01)	0.08*** (0.01)	0.08*** (0.01)
Family income per capita (10 thousand)	0.19*** (0.02)	0.19*** (0.02)	0.18*** (0.02)
Housing subsidies			
One-time subsidy	0.84*** (0.08)	0.83*** (0.08)	0.84* (0.08)
Monthly subsidies	0.15+ (0.08)	0.22** (0.08)	0.16*** (0.08)
None (ref.)			
Family structure			
3 generations in hh	0.49*** (0.09)	0.50*** (0.09)	0.49*** (0.09)
2 generations in hh	0.25*** (0.06)	0.26*** (0.06)	0.25*** (0.06)
1 person hh	− 0.74*** (0.08)	− 0.74*** (0.08)	− 0.74*** (0.08)
Other type	− 1.23*** (0.18)	− 1.27*** (0.18)	− 1.26*** (0.18)
1 generation (couple) in hh (ref.)			
Householder's work unit			
Government/party organization			0.17+ (0.10)
Public institution			0.15* (0.07)
State-owned enterprise			0.20*** (0.05)
Collectively owned enterprise			− 0.20* (0.08)
Self-employed laborer			0.01 (0.08)
Unemployed			− 0.41*** (0.07)
Private/other enterprise (ref.)			
State-owned sector	0.29*** (0.04)	− 0.80*** (0.18)	
State-owned sector* householder's age		0.03*** (0.004)	
N	18,150	18,150	18,150
− 2 Log likelihood	15,054.09	15,016.53	16,052.03
Nagelkerke *R* square	0.090	0.093	0.093

Note: + $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

22.1% ($e^{0.20} = 1.2214$) higher than the odds of a family with a householder employed by private/other enterprise, respectively. The odds for families with a householder employed by collectively owned enterprises or who is unemployed are 18.1% ($e^{-0.2} - 1 = -0.1813$) and 33.6% ($e^{-0.41} - 1 = -0.3363$) less than the odds of family with a

householder employed in private/other enterprises. These results indicate that home-ownership is still associated with the type of work unit, though variation across work units (aside from the omitted category) is only moderate. However, we also see that the probability of home ownership is higher among families who receive subsidies than among families who do not. Thus, institutional factors (type of work unit, housing sub-sidies) still played important and lingering roles in home ownership even during a time when the private housing market had already matured. As expected, SES (income and education) is also positively associated with homeownership, as are age and family type, with larger households more likely to own homes.

So far, we have analyzed the impacts of independent variables on the dichotomous homeownership variable. We now turn to examining the effect of these predictors on different kinds of homeownership using multinomial logistic regression. The results in Table 4 show that the SES variables (education and family income per capita) have a positive association with the ownership of commercial housing. Meanwhile, institu-tional factors also play a very important role in people's ownership of commercial hous-ing as well. Compared to families with a householder employed in private/other enterprise, families with a householder employed in state-owned sectors are less likely to own commercial housing. For example, the odds of a family with the householder employed by either public institution or state-owned enterprise owning commercial housing rather than renting or living in other non-property housing are 19.8% and 12.2% lower than the odds of a family with householder employed by private/other en-terprise. This is because families with householders employed in state-owned sectors are more likely to own housing obtained from housing reforms. For example, the odds of owning housing obtained from housing reform rather than not owning a house for families with a householder employed by government or party organization, public in-stitution, or state-owned enterprise are 60.0%, 75.1%, and 91.6% higher than the odds for family with a householder employed by private/other enterprise, respectively.

As for owning a middle/low price commercial apartment (which was typically ar-ranged as social housing and sold by the local government at a discount price to low-income familie, or to households relocated due to urban renewal/land acquisition), results in Table 4 show that families with householders employed in private/other en-terprise have more opportunity to get this type housing than others. The negative im-pacts of the SES variables also confirm the notion that this kind of housing was arranged for low-income families.

Table 5 delves further into the relationship between household characteristics and housing outcomes by examining different types of housing in which different house-holds live using logistic regressions, where whether a family has a certain type of hous-ing or not is the outcome in each model. Model 5-1 uses ownership of commercial housing as the dependent variable. Results indicate that the SES variables (education and family income) have a positive association with the ownership of commercial hous-ing. However, householders employed in state-owned sectors are less likely to own commercial housing. This is consistent with the results in Table 4, where families with a householder employed in state-owned sectors have a greater likelihood of owning housing obtained during housing reforms (refer to the results in model 5-3). In particu-lar, as shown in model 5-1, the odds of a family with a householder employed by gov-ernment/party organization, public institution, or state-owned enterprise *owning* rather

Table 4 Multinomial logistic regression results of housing type (dependent variable: type of home ownership; reference category: not owned)

	Owned: commercial apartment	Owned: middle/low price commercial apartment	Owned: housing obtained during housing reform
Intercept	− 0.89*** (0.20)	1.58*** (0.28)	− 3.62*** (0.20)
Householder's age	− 0.03*** (0.00)	− 0.02*** (0.00)	0.05*** (0.00)
Householder's education	0.15*** (0.01)	− 0.09*** (0.01)	0.09*** (0.01)
Family income per capita (10 thousand)	0.28*** (0.02)	− 0.4*** (0.05)	0.10*** (0.02)
Housing subsidies			
One-time subsidy	0.97*** (0.09)	0.37* (0.15)	0.84*** (0.09)
Monthly subsidies	0.32*** (0.09)	− 0.02 (0.16)	0.03 (0.09)
None (ref.)			
Family structure			
3 generations in hh	0.59*** (0.10)	0.10 (0.13)	0.63*** (0.10)
2 generations in hh	0.24*** (0.07)	− 0.04 (0.09)	0.48*** (0.06)
1 person hh	− 1.11*** (0.09)	− 0.58 (0.14)	− 0.43*** (0.09)
Other type	− 1.98*** (0.26)	− 1.33 (0.37)	− 0.65** (0.23)
1 generation (couple) in hh (ref.)			
Householder's work unit			
Government/party organization	− 0.05 (0.11)	− 0.15 (0.20)	0.47*** (0.11)
Public institution	− 0.22** (0.08)	− 0.24+ (0.14)	0.56*** (0.08)
State-owned enterprise	− 0.13*** (0.06)	− 0.62*** (0.09)	0.65*** (0.06)
Collectively owned enterprise	− 0.37*** (0.10)	− 0.44*** (0.13)	0.10 (0.09)
Self-employed laborer	0.45*** (0.08)	− 0.06*** (0.11)	− 0.54*** (0.10)
Unemployed	− 0.50*** (0.09)	− 0.47*** (0.10)	− 0.39*** (0.08)
Private/other enterprise (ref.)			
N	18,150		
− 2 Log likelihood	37,152.01		
Nagelkerke *R* square	0.296		

Note: + $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

than *not owning* commercial housing is 26.7%, 40.6%, and 34.3% lower than the odds of a family with a householder employed by private/other enterprise, respectively. Like-wise, as shown in model 5-3, the odds of a family with a householder employed in these three state-owned sectors *owning* rather than *not owning* housing obtained from hous-ing reforms is 66.5%, 105.4%, and 127.1% higher than the odds of their counterparts,

Table 5 Logistic regression for different types of housing

	Model 1	Model 2	Model 3	Model 4	Model 5
	Commercial apartment	Middle/low price commercial apartments	Housing obtained during housing reform	Public housing rentals	Other types of rentals
Intercept	− 0.04 (0.16)	2.01*** (0.25)	− 4.48*** (0.16)	− 1.06*** (0.23)	0.14 (0.21)
Householder's age	− 0.06*** (0.00)	− 0.03*** (0.00)	0.07*** (0.00)	0.01** (0.00)	− 0.03*** (0.00)
Householder's education	0.12*** (0.01)	− 0.16*** (0.01)	0.04*** (0.01)	− 0.07*** (0.01)	− 0.05*** (0.01)
Family income per capita (10 thousand)	0.24*** (0.02)	− 0.56*** (0.05)	− 0.07*** (0.01)	− 0.49*** (0.04)	− 0.04* (0.02)
Housing subsidies					
One-time subsidy	0.32*** (0.06)	− 0.36** (0.13)	0.24*** (0.05)	− 0.81*** (0.11)	− 0.71*** (0.11)
Monthly subsidies	0.35*** (0.07)	− 0.15 (0.14)	− 0.17* (0.07)	0.04 (0.11)	− 0.3** (0.11)
None (ref.)					
Family structure					
3 generations in hh	0.22** (0.08)	− 0.28* (0.12)	0.31*** (0.07)	− 0.40*** (0.12)	− 0.47*** (0.11)
2 generations in hh	− 0.02 (0.05)	− 0.23** (0.09)	0.38*** (0.05)	− 0.07 (0.08)	− 0.35*** (0.07)
1 person hh	− 0.87*** (0.08)	− 0.16 (0.14)	0.14+ (0.08)	0.61*** (0.11)	0.59*** (0.09)
Other type	− 1.71*** (0.24)	− 0.73* (0.10)	0.13 (0.22)	0.07 (0.29)	1.35*** (0.18)
1 generation (couple) in hh (ref.)					
Householder's work unit					
Government/party organization	− 0.31*** (0.08)	− 0.37* (0.18)	0.51*** (0.07)	− 0.25 (0.17)	− 0.05 (0.12)
Public institution	− 0.52*** (0.06)	− 0.44*** (0.12)	0.72*** (0.06)	0.09 (0.11)	− 0.25** (0.09)
State-owned enterprise	− 0.42*** (0.05)	− 0.88*** (0.08)	0.82*** (0.05)	0.15* (0.07)	− 0.47*** (0.07)
Collectively owned enterprise	− 0.33*** (0.09)	− 0.38*** (0.12)	0.31*** (0.07)	0.36*** (0.10)	− 0.08 (0.11)
Self-employed laborer	0.67*** (0.07)	− 0.07 (0.10)	− 0.72*** (0.09)	− 0.22+ (0.12)	0.15+ (0.09)
Unemployed	− 0.3*** (0.08)	− 0.22** (0.09)	− 0.23*** (0.07)	0.45*** (0.08)	0.13 (0.09)
Private/other enterprise (ref.)					
N	18,150	18,150	18,150	18,150	18,150
− 2 Log likelihood	17,920.54	8390.31	19,696.31	10,210.24	10,827.31
Nagelkerke *R* square	0.219	0.139	0.199	0.099	0.052

Note: + *p* < .10,**p* < .05, ***p* < .01, ***p < .001

respectively. Model 5-2 provides further evidence for the conclusion shown in Table 4 that housing ownership of middle/low price commercial apartments is more common among low income families or households relocated by urban renewal/land acquisition.

Another institutional factor—receipt of housing subsidies, especially a one-time subsidy—as shown in models 5-1 and 5-3, has a positive association not only with obtaining housing during housing reforms, but also on getting commercial apartments. Models 5-4 and 5-5 focus on rental housing. Socioeconomic status has a negative association with living in rental housing. As might be expected, families with householders employed by state-owned enterprise are more likely to live in public housing rentals, while families with a householder employed by private/other enterprise are more likely to reside in other types of rentals.

Taking the results from Tables 3, 4, and 5 together, we can summarize that both SES and socialist institutional factors have a similar effect on home ownership, but these factors have a different influence on people's access to different types of housing. Specifically, institutional factors have positive effects on accessing institutional housing, while SES has a negative effect on it. And as shown in Table 1, institutional housing still constitutes a large proportion of all types of housing. Thus, we can conclude that with the maturing of the housing market, both kinds of factors have an important effect on housing tenure and type and that socialist institutional factors still play a very important role in determining the type of housing in which families reside.

Table 6 shows the association between various household characteristics and our final housing outcome: living area per capita. We include all households in model 1a and model 1b and then also stratify the sample and run models separately by whether a family owns a home (model 2a and model 2b) or not (model 3a and model 3b). To highlight the differential effects of socioeconomic status and other variables, we run nested models without the SES factors, followed by models with them. First, in models with all households (model 1a in Table 6), we see that the householder's work unit has a statistically significant effect on housing unit size. For example, families with a householder employed by the government or party organization and in public institutions have larger living areas than families with a householder employed by private/other enterprises; however, families with a householder employed by a state-owned enterprise have smaller living areas than families with a householder employed by private/other enterprises. From model 1a, then, it seems that differences in living area are strongly influenced by institutional factors. After adding the SES variables in model 1b, we see the comparative advantage for families with a householder employed by government or party organization/public institutions is dramatically decreased or becomes statistically insignificant, while the comparative disadvantage for families with a householder employed by a state-owned enterprise is strengthened. Instead, model 1b indicates that living area is mainly determined by socioeconomic status, primarily the householder's education and family income per capita, as well as by controls such as age and family structure.

Models 2a and 2b show results for homeowners, while models 3a and 3b show results for those who do not own their homes. For both of these groups, most institutional factors affect total living area in models without the SES variables, that is, the closer the householder's work unit is to the core of the socialist system, the greater the living area. However, after we add the SES variables into the models, the role of institutional factors weakens or disappears, and SES and other household variables are the main drivers of living area. Thus, we can conclude that with the maturing of the housing market, socioeconomic characteristics and demographic characteristics of households predict the quality of their housing units more so than institutional position.

Table 6 Multiple linear regression results of living area (dependent variable: living area per capita)

	All cases		Families who own housing		Families who do not own housing	
	Model 1a	Model 1b	Model 2a	Model 2b	Model 3a	Model 3b
Intercept	39.17*** (0.65)	16.77*** (1.01)	41.92*** (0.70)	19.7*** (1.09)	31.27*** (1.51)	14.48*** (2.4)
Householder's age	− 0.12*** (0.01)	0.03* (0.01)	− 0.13*** (0.01)	0.01 (0.02)	− 0.11*** (0.03)	0.01 (0.03)
Householder's education		1.02*** (0.05)		1.04*** (0.05)		0.47*** (0.12)
Family income per capita (10 thousand)		1.59*** (0.06)		1.30*** (0.06)		3.54*** (0.21)
Housing subsidies						
One-time subsidy	1.88*** (0.38)	0.97** (0.37)	1.26*** (0.39)	0.56 (0.37)	0.68 (1.34)	− 0.39 (1.28)
Monthly subsidies	1.35** (0.47)	0.42 (0.45)	1.25* (0.49)	0.44 (0.47)	− 0.20 (1.25)	− 1.04 (1.19)
None (ref.)						
Family structure						
3 generations in hh	− 15.11*** (0.51)	− 12.97*** (0.49)	− 16.93*** (0.54)	− 14.92*** (0.52)	− 8.75*** (1.29)	− 5.84*** (1.25)
2 generations in hh	− 9.81*** (0.34)	− 8.22*** (0.33)	− 10.85*** (0.36)	− 9.39*** (0.35)	− 6.17*** (0.83)	− 3.74*** (0.80)
1 person hh	29.41*** (0.53)	28.71*** (0.51)	32.95*** (0.60)	32.36*** (0.58)	26.6*** (1.08)	24.38*** (1.04)
Other type	− 3.82** (1.38)	− 3.35* (1.32)	− 7.08*** (1.87)	− 5.62** (1.80)	4.80* (2.15)	2.18 (2.06)
1 generation (couple) in hh (ref.)						
Householder's work unit						
Government/party organization	5.74*** (0.51)	0.88 (0.51)	5.33*** (0.53)	0.99+ (0.53)	5.36*** (1.51)	− 1.46 (1.50)
Public institution	2.91*** (0.41)	− 0.82* (0.41)	2.63*** (0.43)	− 0.8a (0.43)	2.18* (1.09)	− 2.30* (1.08)
State-owned enterprise	− 1.31*** (0.33)	− 1.74*** (0.32)	− 1.41*** (0.35)	− 1.81*** (0.34)	− 1.87* (0.78)	− 2.10** (0.75)
Collectively owned enterprise	− 2.31*** (0.54)	− 1.37** (0.52)	− 1.9*** (0.59)	− 1.04+ (0.57)	− 2.68* (1.16)	− 1.78 (1.11)
Self-employed laborer	3.77*** (0.5)	3.44*** (0.48)	3.83*** (0.54)	3.61*** (0.52)	3.82*** (1.11)	2.56* (1.07)
Unemployed	− 3.68*** (0.47)	− 0.73 (0.46)	− 2.40*** (0.55)	0.22 (0.54)	− 3.45*** (0.91)	− 0.22 (0.89)
Private/other enterprise (ref.)						
N	18,150	18,150	14,396	14,396	3754	3754
Adjusted R^2	0.340	0.392	0.375	0.422	0.312	0.371

Note: + $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Conclusion and discussion

The goal of this paper has been to examine factors that shape patterns of housing in-equality in urban China, especially now that housing market reforms have been fully implemented. A few patterns emerge from our analyses. For one, the rate of homeow-nership is very high (nearly 80%) in Nanjing, indicative of the broad-based privatization of housing that has occurred. Nevertheless, among homeowners, a high proportion of families originally obtained their housing from the internal market, and often during

the housing reform process itself. Although a household's socioeconomic status affects the acquisition of housing, especially on the open market, the impact of a household's position in the socialist system (such as being employed by the government or party organization) still can be found on homeownership, even 10 years after the 1998 housing reforms. Notably, however, the size of one's housing unit was more influenced by socioeconomic status than a household's position in the socialist system. Thus, while we clearly see lingering effects of socialist institutional factors, SES also plays a large, and probably increasing, role in shaping patterns of housing inequality in urban China.

Previous studies that used data collected during the process of the 1998 housing-reform process showed that socialist institutional factors shaped people's housing conditions, such that the emerging winners in the housing reform process were those already in privileged positions within the state (Huang and Jiang 2009; Huang and Yi 2011; Logan et al. 2009; Logan et al. 2010). Our study builds on these studies by using survey data collected after the new private housing market had been implemented and the internal market had disappeared. Comparing our findings with previous studies, we can conclude that the effects of institutional factors on housing inequality that had existed before and during the process of housing reforms can still be found in people's housing condition several years later. In other words, housing inequality in today's urban China is shaped to some extent by the legacy of socialist intuitional arrangements before and during housing reforms.

Although the impact of institutional factors can still be found in housing inequality in urban China, we also see the emerging importance of socioeconomic status, especially in influencing the quality of people's housing unit—above and beyond a household's position within the socialist state. Thus, future research should track whether the role of SES will continue to grow and whether the effect of institutional factors, such as work unit system, will fade over time.

This is a particularly important issue in light of the lingering effect of state institutional arrangements in other post-socialist countries, such as a number of Central and Eastern European countries (Buckley et al. 1995; Kosareva and Struyk 1993; Lux et al. 2013; Pickvance 2010; Yemtsov 2007). Our study focuses on housing inequality in urban China as an example of social inequality, uses the work unit system as the main indicator of socialist institutional arrangements, and finds that the residual effect of socialist institutional arrangements on social inequality continues to exist. This indicates that both the institutional structure that had been established before market reforms and the process of market reform itself (which was embedded in the institutional structure) play an important role in shaping patterns of social inequality. As for market reforms, we should be cognizant not only of their effect on social and economic development—especially at the national level—but also on how and to what extent the effects of traditional institutional arrangements on inequality have been eliminated by such reforms. One of the purposes of market reform in China was to inspire people's enthusiasm for private-sector economic activities to spur growth and development. Market reforms thus have the potential to eliminate inequalities embedded in the original socialist system, and especially the inequalities based on socialist caste system, in order to build a social order based on meritocracy. However, this kind of change will be limited if the winners in the new system remain those who were privileged in the old—and who in fact did well during the market reform process precisely because they

were in a position to shape and take advantage of changes to the system. This is an issue requiring additional attention, and perhaps reform, in the future.

Endnotes

[1]Householder refers to the head of household.

[2]Based on the original measure, the type of working unit for retirees prior to retirement cannot be ascertained, so we omit retiree samples.

[3]There are two kinds of land systems in China: state-owned land and collectively owned land, and only houses built on state-owned land and with title deed and land certificates can be treated as housing that is owned by the householder.

Abbreviations
Housing type I: Housing owned by the household; Housing type II: Housing that is not owned by the household or the ownership cannot be identified; Type I-a: Commercial housing (*shanpin fang*); Type I-b: Middle- and low-price commercial housing/affordable housing (*zhong di jia shanpin fang/ jingji shiyong fang*); Type I-c: Housing obtained as part of the housing reform (*fanggai fang*); Type II-a: Public housing rental (*gong zu fang*); Type II-b: Original private housing (*yuanyou si fang*); Type II-c: Private housing rental; Type II-d: Other housing that is not owned by the household

Availability of data and materials
The datasets used in the current study are available from the corresponding author on reasonable request.

Authors' contributions
CF wrote the manuscript and performed the statistical analysis. JI revised the manuscript, and both of them were responsible for the design of the study. Both authors read and approved the final manuscript.

Competing interests
The authors declare that they have no competing interests.

Publisher's Note
Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Author details
[1]Department of Sociology, Nanjing University, 168, Xianlin Avenue, Nanjing 210023, China. [2]Department of Sociology and Criminology, Penn State University, 203 Oswald Tower University Park, State College, PA 16802, USA.

References
Bell, Colin. 1977. On housing classes. *Journal of Sociology* 13(1): 36–40.

Bian, Y.J., and J.R. Logan. 1996. Market transition and the persistence of power: the changing stratification system in urban China. *American Sociological Review* 61(5): 739–758.

Bian, Yanjie. 1994. *Work and inequality in urban China*. New York: SUNY Press.

Bian, Yanjie, J.R. Logan, Hanglong Lu, Yongkan Pan, and YIng Guang. 1996. "Danwei zhi" yu zhufang shangpinhua ["Danwei system" and housing commercialization]. *Shehuixue yanjiu* 11(2): 28–35.

Bian, Yanjie, John R. Logan, Hanlong Lu, Yunkang Pan, and Ying Guan. 1997. Work units and housing reform in two Chinese cities. In *Danwei: the changing Chinese workplace in historical and comparative perspective*, ed. X. Lu and E. Perry, 223–250. New York: M. E. Sharpe.

Bray, David. 2005. *Social space and governance in urban China: the danwei system from origins to reform*. Stanford, CA: Stanford University press.

Buckley, R.M., P.H. Hendershott, and K.E. Villani. 1995. Rapid housing privatization in reforming economies - pay the special dividend now. *Journal of Real Estate Finance and Economics* 10(1): 63–80.

Chen, Guo. 2015. The heterogeneity of housing-tenure choice in urban China: a case study based in Guangzhou. *Urban Studies* 53(5): 957–977.

Chen, Zhao, Jie Chen, and Xiaofeng Liu. 2008. Ande guangsha qianwang jian: Zhongguo chengzheng zhufang tizhi shichanghua gaige de huigu yu zhanwang [retrospect and prospects for marketization of the Chinese urban housing system]. *Shijie jingji wenhui* 1: 43–45.

Clark, W.A.V., M.C. Deurloo, and F.M. Dieleman. 1994. Tenure changes in the context of micro-level family and macro-level economic shifts. *Urban Studies* 31(1): 137–154.

Clark, W.A.V., M.C. Deurloo, and F.M. Dieleman. 1997. Entry to home-ownership in Germany: some comparisons with the United States. *Urban Studies* 34(1): 7–19.

Drudy, P.J., and Michael Punch. 2002. Housing models and inequality: Perspectives on recent Irish experience. *Housing Studies* 17(4): 657–672.

Elmelech, Yuval. 2004. Housing inequality in new York City: racial and ethnic disparities in homeownership and shelter-cost burden. *Housing, Theory and Society* 21(4): 163–175.

Feng, Jian, and Yixing Zhou. 2008. Zhuanxin qi Beijing shehui kongjian fenyi chonggou [restructuring of socio-spatial differentiation in Beijing in the transition period]. *Dili xuebao* 63(8): 829–844.

Fu, Qiang. 2014. When fiscal recentralisation meets urban reforms: prefectural land finance and its association with access to housing in urban China. *Urban Studies* 52(10): 1971-1809.

Gu, Edward. 2001. Beyond the property rights approach: welfare policy and the reform of state-owned enterprises in China. *Development and Change* 32(1): 129-150.

Hegedüs, József, and Iván Tosics. 1994. Privatisation and rehabilitation in the Budapest inner districts. *Housing Studies* 9(1): 39-54.

Henderson, J. Vernon, and Yannis M. Ioannides. 1989. Dynamic aspects of consumer decisions in housing markets. *Journal of Urban Economics* 26(2): 212–230.

Huang, Youqin. 2003. A room of one's own: housing consumption and residential crowding in transitional urban China. *Environment and Planning A* 35(4): 591–614.

Huang, Youqin, and Leiwen Jiang. 2009. Housing inequality in transitional Beijing. *International Journal of Urban and Regional Research* 33(4): 936–956.

Huang, Youqin, and Chengdong Yi. 2011. Second home ownership in transitional urban China. *Housing Studies* 26(3): 423–447.

Huque, Ahmed Shafiqul. 2005. Shifting emphasis in the role of the state: urban housing reform in China. *Asian Journal of Political Science* 13(2): 53–74.

Kosareva, Nadezhda, and Raymond Struyk. 1993. Housing privatization in the Russian Federation. *Housing Policy Debate* 4(1): 81–100.

Lee, J. 2000. From welfare housing to home ownership: the dilemma of China's housing reform. *Housing Studies* 15(1): 61–76.

Li, Bin. 2002. Zhongguo zhufang gaige zhidu de fengexing [the division characteristic of Chinese housing reform system]. *Shehuixue yanjiu* 16(5): 80–87.

Li, Ji-Xuan. 2006. Zhongguo zhufang shuangguizhi gaige jiqi bu pingdeng xing [housing system reform and inequality in China]. *Shehuizhuyi yanjiu* 3: 46–49.

LI, Zhigang, Wu Fulong, and Lu Hanlong. 2004. Dandai woguo da dushi de shehui kongjian fenyi--dui Shanghai san ge shequ de shizhen yanjiu [socio-spatial differentiation in China: a case study of three neighboughoods in Shanghai]. *Chenshi guihua* 28(6): 60–67.

Liao, Banggu, Jiangang Xu, Guofu Xuan, Yi Qi, and Anxin Mei. 2012. 1947-2007 nian Shanghai zhongxin chengqu juzhu kongjian fenyi bianhua--jiyu juzhudi leixin shijiao [evolution of residential differentiation in central Shanghai city (1947-2007): a view of residential land-use types]. *Dili yanjiu* 31(6): 1089–1102.

Lin, N. 1995. Local market socialism - local corporatism in action in rural China. *Theory and Society* 24(3): 301–354.

Lin, Nan, and Yanjie Bian. 1991. Getting ahead in urban China. *American Journal of Sociology* 97(3): 657–688.

Logan, J.R., Y. Fang, and Z. Zhang. 2009. Access to housing in urban China. *International Journal of Urban Regional Research* 33(4): 914–935.

Logan, J.R., Y. Fang, and Z. Zhang. 2010. The winners in China's urban housing reform. *Hous Studies* 25(1): 101–117.

Logan, John R., Yanjie Bian, and Fuqin Bian. 1999. Housing inequality in urban China in the 1990s. *International Journal of Urban and Regional Research* 23(1): 7–25.

Lu, Xiaobo, and Elizabeth J. Perry. 1997. *Danwei: the changing Chinese workplace in historical and comparative perspective*. New York: Me Sharpe.

Lux, M., P. Sunega, and T. Katrnak. 2013. Classes and castles: impact of social stratification on housing inequality in post-socialist states. *European Sociological Review* 29(2): 274–288.

Mitra, P. and R. Yemtsov. 2006. Increasing inequality in transition economies: is there more to come? Policy, Research working paper series, No. WPS 4007. Washington, DC: World Bank.

National Bureau of Statistics of China. 2012. *Zhongguo tongji nianjian [China statistical yearbook]*. Beijing: China Statistical Publishing House.

Nee, Victor. 1989. A theory of market transition: from redistribution to markets in state socialism. *American Sociological Review* 54(5): 663–681.

Oi, J.C. 1992. Fiscal reform and the economic foundations of local state corporatism in China. *World Politics* 45(1): 99–126.

Osborn, Albert F., and Tony C. Morris. 1979. The rationale for a composite index of social class and its evaluation. *British Journal of Sociology* 30(30): 39–60.

Parish, W.L., and E. Michelson. 1996. Politics and markets: dual transformations. *American Journal of Sociology* 101(4): 1042–1059.

Pickvance, Chris G. 2010. Housing privatization and housing protest in the transition from state socialism: a comparative study of Budapest and Moscow. *International Journal of Urban and Regional Research* 18(3): 433–450.

Rex, John, and Robert Moore. 1969. *Race, community and conflict: a study of Sparkbrook*. London: Oxford University press.

Rona-Tas, Akos. 1994. The first shall be last? Entrepreneurship and communist cadres in the transition from socialism. *American Journal of Sociology* 100(1): 40–69.

Sato, Hiroshi. 2006. Housing inequality and housing poverty in urban China in the late 1990s. *China Economic Review* 17(1): 37–50.

Sato, Hiroshi, Terry Sicular, and Xueming Yue. 2013. Housing ownership, incomes, and inequality in China, 2002-2007. in Shi Li, Hiroshi Sato and Terry Sicular, eds., *Rising Inequality in China: Challenges to a Harmonious Society*, New York: Cambridge University Press .

Shen, Guan-bao, and Meng-hua Qiu. 2008. Zhuanxin qi Zhongguo chengshi juzhu kongjian de fenyi yu jihua--yi Guangzhou wei li [Differentitation and polarization of China's urban living space in the transformation period]. *Shanghai daxue xuebao (shehui kexue ban)* 15(1): 148–154.

Shiming, Yuan. 1998. *Key issues in establishing a new housing system based on a market oriented economy*. Chinese Economies Research Center (CERC) Working Papers,University of Adelaide, Chinese Economies Research Centre, No.1998–01.

Statistic Bureau of Jiangsu. 2008. *Jiansu tongji nianjian [Jiangsu statistic yearbook]*. Beijing: China statistical publishing house.

Szelenyi, Ivan. 1978. Social inequalities in state socialist redistributive economies dilemmas for social policy in contemporag socialist societies of Eastern Europe. *International Journal of Comparative Sociology* 19(1-2): 63–87.

United Natins University (UNU-WIDER). 2008. World Income Inequality Database V2.0c..Retrieved 19 May 2016, from http://www.wider.unu.edu/research/Database/en_GB/database/.

Walder, Andrew G. 1988. *Communist neo-traditionalism: work and authority in Chinese industry*. Oakland,CA: University of California Press.

Walder, Andrew G. 1995. Local governments as industrial firms: an organizational analysis of China's transitional economy. *American Journal of sociology* 101(2): 263–301.

Wang, Xiaolu. 2010. Woguo guominshouru fenpei xianzhuan, wenti ji duice [Reflections on improving national income distribution]. *Guojia xingzheng xueyuan xuebao* 3: 23–27.

Wang, Xiaolu. 2013. Ruhe kandai Zhongguo guanfang de jini xishu? [How to treat China's Gini coefficient which was announced officially?]. In *The wall street journal (Chinese edition),* Available at: http://cn.wsj.com/gb/20130128/OPN092619.asp.

Wang, Ya Ping. 2000. Housing reform and its impacts on the urban poor in China. *Housing Studies* 15(6): 845–864.

Wang, Ya Ping, Yanglin Wang, and Glen Bramley. 2005. Chinese housing reform in state-o\wned enterprises and its impacts on different social groups. *Urban Studies* 42(10): 1859–1878.

Wu, Fulong. 1996. Changes in the structure of public housing provision in urban China. *Urban Studies* 33(9): 1601–1628.

Wu, Xiaogang, and Yu Xie. 2003. Does the market pay off? Earnings returns to education in urban China. *American Sociological Review* 68(3): 425–442.

Xie, Yu, and Xiaogang Wu. 2008. Danwei profitability and earnings inequality in urban China. *The China Quarterly* 195: 558–581.

Xin, Meng. 2007. Wealth accumulation and distribution in urban China. *Economic Development and Cultural Change* 55(4): 761–791.

Yang, Shangguang, and Chunlan Wang. 2010. Da chengshi shehui kongjian yanbian taishi poxi yu zhili fansi--jiyu Shanghai de diaocha yu sikao [Study on social spatial evolution trend and the governance in megapolis--based on the research of Shanghai]. *Journal of Public Management* 7(1): 35–46.

Ye, Jian-Ping, Jia-Ning Song, and Chen-Guang Tian. 2010. An analysis of housing policy during economic transition in China. *International Journal of Housing Policy* 10:(3) 273–300.

Yemtsov, Ruslan. 2007. *Housing privatization and household wealth in transition. Research Paper 2007/002*. Helsinki: UNU-WIDER.

Zhou, Rui. 2013. Zhongguo jin shi nian shoudu gongbu jini xishu, suoxiao shouru chaju renwu jingpo [It is the first time in recent ten years that China releases its' Gini index officially, and it is urgent for China to narrow the income gap]. Retrieved 6 May, 2016, from http://money.163.com/13/0118/19/8LHBBF3600253B0H.html.