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# Public housing into private assets: Wealth creation in urban China



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## ABSTRACT

State socialist economies provided public housing to urban citizens at nominal cost, while allocating larger and better quality apartments to individuals in elite occupations. In transitions to a market economy, ownership is typically transferred to existing occupants at deeply discounted prices, making home equity the largest component of household wealth. Housing privatization is therefore a potentially important avenue for the conversion of bureaucratic privilege into private wealth. We estimate the resulting inequalities with data from successive waves of a Chinese national income survey that details household assets and participation in housing programs. Access to privatization programs was relatively equal across urban residents in state sector occupations. Elite occupations had substantially greater wealth in the form of home equity shortly after privatization, due primarily to their prior allocations of newer and higher quality apartments. The resulting gaps in private wealth were nonetheless small by the standards of established market economies, and despite the inherent biases in the process, housing privatization distributed home equity widely across those who were resident in public housing immediately prior to privatization.

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## 1. Introduction: Inequality in transitional economies

There are two broad streams of theory and research about the transformation of inequality during transitions from state socialism. The largest stream is focused on the question of how rewards to individuals change as market competition supplants bureaucratic allocation. Some of this research employs equations similar to those used to test theories of human capital to detect changing income returns to political rank (current or past), party membership (current or past), education, experience, and occupation (Bian and Logan, 1996; Gerber, 2000; Gerber and Hout, 1995; Hauser and Xie, 2005; Liu, 1998, 2003; Nee, 1989, 1996; Walder, 2002; Walder and Nguyen, 2008; Wu and Xie, 2003; Xie and Hannum, 1996). Others pose similar questions about status attainment and occupational mobility, and estimate changing probabilities of entering different elite positions as a market economy emerges (Eyal et al., 1998; Hanley et al., 1995; Li and Walder, 2001; Walder et al., 2000; Wu and Treiman, 2007).

A second, smaller stream of research focuses on a different question: the ability of communist era elites to obtain ownership or control of public assets in the course of market reform. This research is not about changing returns to individual characteristics due to market processes. Instead, it is about political and organizational processes at the point

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in time that public property is transferred to new owners. The central question is the value of the “incumbency advantage” (Alexeev, 1999): the ability of communist-era elites to convert their bureaucratic privileges into money form by obtaining control over public property as it is transferred to new owners. Most of this work has focused on the ability of elites to obtain control over state enterprises (McFaul, 1995; Róna-Tas, 1994). Cross-national differences have been attributed primarily to political processes: the extent of regime change, the speed and timing of privatization, and the regulatory environment within which it takes place (Walder, 2003). Case studies that compare outcomes across economic sectors within single countries have demonstrated that the outcomes can vary considerably due to the features of the assets and enterprises involved (Walder et al., 2013). It is difficult to pursue this work with the same level of rigor as individual-level analyses of income determination and occupational mobility. Ownership stakes in large enterprises are limited to a small minority of individuals, and ownership forms and the identity of owners are often intentionally vague. Surveys of enterprises rather than households may be the most appropriate way to test these ideas, but they present major sampling difficulties, and enterprises are constantly being established, closed, or merged. The few such studies that have been mounted successfully have focused on ownership forms rather than the identity of the owners (Hanley et al., 2002; Stark and Vedres, 2006).

There is, however, one type of asset that is very widely dispersed, measurable at the level of the household, distributed according to bureaucratic rank, almost universally privatized, and which becomes the largest single component of household wealth: housing. Housing is uniquely suited to testing claims about the incumbency advantage. Some of the earliest and most influential research on inequality under state socialism focused on housing inequality. Based on survey data that demonstrated large occupational inequalities in housing size and quality in public housing, Szelényi (1978, 1983) built a theory about inequality in “redistributive” economies that has heavily influenced subsequent theory and research (Nee, 1989). Subsequent work replicated these early findings, and found that individuals with high political rank and elite occupations were allocated larger and better quality apartments (Dániel, 1985; Logan et al., 1999; Walder, 1992; Zhou and Suhomlinova, 2001).

Housing also lends itself to systematic investigation because it is a household asset and has been extensively privatized in transitional economies. No such economy, regardless of its form of government, has found it socially or politically feasible to expel families from their homes as public housing is privatized. Instead, existing tenants are typically given the right to purchase their homes at deeply discounted rates (Guriev and Rachinsky, 2008; Yemtsov, 2008).

By the year 2000 most transitional economies had urban home ownership rates of 80% or above, much higher than the 50–60% typical of developed market economies (Yemtsov, 2008: 314). Even at the lower rates of ownership in developed market economies, housing and real estate are still the largest single asset class—in the United States, 52% of all assets in 2002 (Gottschalk, 2008). Housing privatization generates extensive holdings of private assets for the first time. In the former Soviet Union and Eastern Europe an estimated 1.1 trillion US dollars in assets were transferred to households during the 1990s (Yemtsov, 2008: 313). Housing privatization therefore promises unique leverage over questions about the direct conversion of bureaucratic privilege into monetized wealth.

## 2. Housing privatization: conversion of rank into wealth?

Because past research has focused on housing as symbolic of the kinds of inequalities typical of bureaucratic distribution, there are reasons to suspect that privatization of housing is potentially a major source of elite advantage during a market transition. However, there are three reasons to question the proposition that housing privatization gives elite households a large windfall of household wealth. The first is that the subsequent market value of the larger and better quality apartments enjoyed by ranking bureaucrats and professionals may not be particularly large. Past studies have typically shown that before privatization, the households of those in elite occupations had more per capita housing space, more rooms, and more amenities like private bathrooms and kitchens. These same households are also likely to live in more desirable neighborhoods in better locations. These inequalities may have seemed glaring in the context of a system that claimed to enforce equality via bureaucratic distribution, but occupational differences in housing conditions may nonetheless have been much smaller than in established market economies, resulting in relatively muted inequalities in wealth after privatization. Until the housing stock has been privatized and obtains a market value, it is unclear how large the resulting inequalities of wealth will be.

The second reason is that other dimensions of inequality—in particular, across organizations—may have muted inequalities due to occupational rank. Past research on planned economies has shown that differences in bargaining power across organizations of different size and rank translated into marked differences in the living standards of their employees, including differences in the size and quality of apartments (Bian, 1994; Walder, 1992). Research on transitional economies has shown that these organizational differences may persist well into the process of market reform (Wang, 2008). The “incumbency advantage”, therefore, may inhere as much to the rank and power of organizations as it does to the rank of individuals so emphasized in prior theories.

The third reason is that inequalities due to privatization depend also on how programs are implemented. If elite households are given preferential access to housing programs, or if the terms are set in a way that favors them, the resulting inequalities in wealth will be larger. This can occur in two ways. Individuals in lower status occupations may be offered the opportunity to purchase their existing homes at subsidized rates less frequently, or the terms of the buyout may be too expensive for them to afford. Such barriers to lower-status household participation in housing privatization will tend to increase the resulting inequalities of wealth.

In short, the magnitude of the “incumbency advantage” in the conversion of use rights to private property may turn out to be modest, especially if prior housing inequalities were a product of organizational assets as much as individual rank, and if privatization programs were widely and relatively equally available to all occupants of public housing. Those who believe that housing inequalities under state socialism were large in substantive terms, and that elites are likely to design privatization programs that favor themselves, will expect elite occupations to extract large wealth advantages from their socialist-era housing. However, the resulting occupational inequalities in wealth will be modest if it turns out that the implicit market value of socialist-era housing privileges was not particularly large, differences across organizations were large, or if access to privatization was highly equal across occupations.

These are empirical questions, and despite the fact that there are already a number of publications that examine the impact of housing privatization on the distribution of wealth, we still do not have satisfactory answers to them. We examine these questions by exploiting survey data on household income and assets in urban China, carried out in three waves, covering the years 1988, 1995, and 2002 (Eichen and Zhang, 1993; Li et al., 2008; Luo et al., 2013). The data from the Chinese Household Income Project (CHIP), unusually detailed for China, are the most complete currently available for investigating these questions. During the 1990s, China carried out a program of urban housing privatization that resulted in a drastic shift in ownership patterns in a brief period. Private housing was rare at the outset of this program, but it soon became the norm. The rapid shift in urban housing ownership, and the careful national surveys of household income and wealth, permit unusual leverage over these questions.

Previous analyses of the CHIP data have focused on overall levels of inequality. They have demonstrated rapid increases in household wealth between surveys that were too large to be accounted for by rises in household incomes. Using measures of inequality (Gini coefficients), they have shown that the distribution of wealth was considerably more unequal than the distribution of income, and that the distribution of housing assets was the largest contributor to overall inequalities of wealth (Meng, 2007; Li and Zhao, 2008; Sato et al., 2013; Zhao and Ding, 2008). These studies have demonstrated that higher income households expanded their wealth faster than others, and that the non-savings component of wealth (primarily housing) expanded faster for households with higher incomes. Household wealth increased more rapidly than could be explained by increasing incomes, and the most rapidly increasing component of wealth was housing assets, which were transferred to households in the 1990s, and which subsequently appreciated rapidly in price (Meng, 2007; Sato et al., 2013).

These findings appear to support recent field studies that suggest large windfall gains for elite occupations through housing privatization (Tomba, 2004). Yet these studies were not designed to examine the occupational differences that have been the primary focus of so many analyses of elite advantages during market transition. Housing privatization may have inflated overall measures of inequality in household wealth, but these studies do not ask how these inequalities are related to occupational statuses, or how large they are across occupations. The only determinant of inequality related to bureaucratic status examined in these studies is party membership. Households that included party members enjoyed statistically significant premiums in housing assets and total wealth after privatization (Meng, 2007). Yet party membership is not an elite status, although members of elite occupations tend to be party members at higher rates. While not directly addressing questions about occupational privilege, these studies suggest that bureaucratic elites may have enjoyed a major windfall of wealth in the form of home equity.

Recent publications, analyzing micro-data from a subsample of the 2000 national census, conclude that the main beneficiaries of housing privatization were the same groups that benefited from bureaucratic public housing allocations (Logan et al., 2009, 2010). They found this to be true in two separate senses. First, recent rural migrants were disadvantaged because, not previously resident in cities, and not eligible for public housing allocations in the prior system, they were excluded from the asset windfall enjoyed by residents of public housing during the privatization process. Second, households headed by individuals with higher occupational statuses enjoyed larger discounts over the estimated value of their privatized apartments (Logan et al., 2010: 112). Our interest is solely in the second of these findings. Rural migrants who lacked urban housing registration were not eligible for allocations of public housing, and therefore could not participate in the subsidized home purchase programs. This was a policy choice, a holdover of the previous barriers to permanent migration from countryside to city that persist in many forms to the present day, even as urban migrant populations grow. It is the second finding that is of direct relevance to our central question: to what extent did differences in the quality of bureaucratically allocated housing, coupled with occupational biases in the privatization program, translate into inequalities in wealth as these housing assets were privatized at a discount?

The CHIP data provide a different kind of leverage over these questions than census data. First, they cover a wider range of urban settings, while the studies based on census data examined only the eight largest Chinese metropolises.<sup>1</sup> Second, the CHIP data contain a number of potentially relevant variables that are unavailable through the census: detailed enumeration of household wealth in various forms, including the estimated value of the current home, party membership of household members, and work sector of household members. The work sector is potentially crucial, because earlier studies of bureaucratic housing allocation have found that state sector work units provided better housing allocations—net of occupational status (Bian, 1994; Logan et al., 1999; Walder, 1992).

<sup>1</sup> The 2002 urban CHIP sample was the first to attempt full representation of rural migrants. A separate sample of 2000 migrant households was drawn separately from a different sample of cities and answered questions from a somewhat modified questionnaire (Li et al., 2008: 352–353). Even among the long-term, stable migrants included in the sample, fewer than 10% owned urban housing where they lived (Sato et al., 2013: 105). Because these households were ineligible for public housing and privatization programs, they are outside the scope of this study.

**Table 1**  
Housing trends, urban China, 1988–2002. Source: Chinese Household Income Project (1988, 1995, 2002)

Item	1988	1995	2002
Household living space (square meters)	43	48	58
Home ownership (percent)	14	42	78
Total household wealth (yuan)	–	37,091	122,298
Market value of housing (yuan)	–	15,202	69,739
Net housing asset (yuan)	–	14,904	67,255
Financial assets (yuan)	–	11,731	39,736
Durable goods (yuan)	–	7961	9170
Fixed production assets (yuan)	–	466	2462
Other assets (yuan)	–	1731	1872
Total household income (yuan)	5116	14,232	24,980
Total sample size	9009	6931	6835

Except for home ownership and sample size, numbers in cells are sample means.

In this paper we focus on the impact of privatization among registered urban residents, tracking elite occupational groups through the process of housing privatization. Our interest is in the implications of stratification by *rank* among the registered urban residents prior to housing reform on the distribution of household assets afterwards. As China's market reforms expanded, increasingly large numbers of rural migrants entered cities and resided there for significant periods of time, most of whom did not obtain registration status, were ineligible for public housing assignments, and were therefore excluded from the privatization process entirely. This form of stratification by *residence* is outside the scope of this study, which focuses specifically on the translation of public housing into private housing assets among long-term, non-migrant populations. We begin with a demonstration of prior housing privileges of elite occupations; we then analyze occupational differences in access to subsidized home purchases; and rapid changes in the probability of home ownership through time. Finally, we estimate the resulting occupational differences in housing assets and total assets. Our core question is the extent to which the privatization of public housing led directly to larger windfalls of wealth for those in elite occupations, and if so, how large those advantages were.

### 3. China's housing privatization

Before China's market reforms local governments or work units allocated housing. Waiting lists were long and apartments often crowded and primitive. On the eve of reform more than half of the housing stock was by official standards "in poor repair" (Walder, 1986: 194–196; also Zax, 2003: 318–319). There was no market for privately owned apartments and new quarters could only be obtained from public sources. Housing costs were extremely low. Rent and utilities were so highly subsidized that they represented a negligible part of family budgets, typically less than 5% of household expenditures in the early 1980s, and ranging from 5% to 7% in the late 1980s to mid-1990s, compared to roughly 45% in the United States (Hu et al., 1987; Sato et al., 2013: 89; Walder, 1986: 60).

After the early 1990s housing became a commodity for individuals to purchase rather than a state welfare provision (Sato et al., 2013: 87–94; Tomba, 2004; Wang and Murie, 1996; Zax, 2003). In 1994 China's State Council authorized work units and urban governments to permit families to finance purchases of their current apartments at deep discounts. Households were given a choice to purchase either full or partial property rights in their homes. Partial property rights permitted a household to use, rent, and bequeath the home to offspring after death, and to use the home as collateral for loans. The only restriction that distinguished partial from full property rights was that the home could not be sold to others for five years, and the proceeds had to be shared with the occupant's work unit. One survey found that only 18% of households held partial rather than full property rights after the housing reform (Wang, 2011: 2084). Pent-up demand drove apartment prices upward (Wang, 2011). Home ownership in cities grew from 11% of households in 1978 to almost 80% in 2002, far exceeding the level of the United States (Khan and Riskin, 2005).<sup>2</sup> Almost all housing shifted from public to private ownership in a little over a decade.

Table 1 summarizes the main outlines of change from 1988 to 2002, as reflected in three waves of the CHIP surveys. In 1988, only 14% of households lived in private housing, which was either a family inheritance (6.8%), self-built (6.5%), or purchased (0.4%). A total of 84% still lived in public housing, while the remaining 2% primarily rented private housing from others (see also Zax, 2003: 322–323). In 2002, after the privatization program was essentially complete, 78% of all households owned their own homes with partial or full property rights and only 16% continued to live in rent-subsidized work unit housing.

<sup>2</sup> This seemingly high percentage excludes unregistered migrants from rural areas, both temporary and long term, who occupy as much as a quarter of the population in many large cities. Publications based on census micro-data for 2000 (Logan et al., 2009, 2010) report lower levels of housing ownership, but these publications analyze data only from the eight largest Chinese cities; the much higher percentages in the publications cited here, employing the same dataset that we analyze in this paper, are more broadly representative of the entire range of city sizes.

Of the households that owned their homes by 2002, 78% had recently purchased them through the subsidized purchase program, 9% had recently purchased commercially built apartments, and 13% lived in homes inherited from family members. Even more important for our purposes is the rapid growth in household financial assets represented by the market value of homes. In the seven years from 1995 to 2002, the average value of housing assets grew 4.6-fold, while total household wealth grew 3.3-fold. This reflects the increasing value of real estate, and the increased rates of home ownership due to privatization. By 2002, housing assets comprised 57% of total household wealth, an amount equal to five times the average household income in 1995 (14,232 yuan) and almost three times the average household income in 2002 (24,980 yuan).<sup>3</sup>

#### 4. Data and measures

The Chinese Household Income Project, carried out by a team of international economists in collaboration with China's National Bureau of Statistics, has conducted a series of national surveys, employing substantially the same set of questions, covering the years 1988, 1995, 2002, and 2007 ([Chinese Household Income Project, 1988, 1995, 2002; Li et al., 2013](#)).<sup>4</sup> These surveys have been the basis of landmark studies of changes in urban and rural inequality during the course of market reform ([Khan et al., 1992; Khan and Riskin, 2005; Li et al., 2013; Li and Zhao, 2008; McKinley, 1996; Meng, 2007; Riskin et al., 2001](#)). They contain several measures that are essential for our purposes: data on household composition, the age, gender, occupation, work unit sector, education, income, and party membership of household members. Of special interest is information about housing conditions, housing ownership, housing purchases, and housing value. The survey is unique for its careful accounting not just of household income, but (for the 1995 and 2002 waves) total household assets, including the value of current housing, if it is privately owned. The first three waves of the survey provide a unique opportunity to analyze the impact of housing privatization on ownership patterns and household wealth. We employ the data from the urban portion of the sample only—private ownership of housing was always the norm in rural China. We employ the data collected in the 1988, 1995, and 2002 waves, the period during which housing privatization took place, especially for 2002, the wave that contains the most complete data on household financial assets.

##### 4.1. Survey design

The sample design began with two provinces from each of three geographical regions (North, East Coast, West) and three provinces from the Central Inland region, along with the municipality of Beijing. One additional province (Sichuan) was added in the 1995 and 2002 waves. The samples were drawn from households included in much larger annual surveys conducted by China's National Bureau of Statistics. The CHIP survey teams drew a two-stage stratified random sample from the households surveyed by the Bureau of Statistics, and administered supplementary questionnaires that were combined with basic household data collected by the Bureau ([Eichen and Zhang, 1993: 332–334; Li et al., 2008: 339–347](#)).<sup>5</sup> Within regions, county-level units were selected randomly following an equidistant sampling method, probability proportional to population size, from a list of jurisdictions stratified by the average wages of all citizens with urban household registration. In 1988, 96 cities and counties/towns were selected, and a smaller number of 69 cities and counties/towns were selected in year 1995 and 2002. Within these jurisdictions 9009 households were selected randomly for interviews covering 1988, 6934 for 1995, and 6835 households for 2002 (see [Li et al., 2008: 339–347](#)). Response rates for the three waves are not reported and are unavailable. However, official Chinese government surveys typically have response rates that are unusually high by international standards. The 2008 national survey of private entrepreneurs conducted by the All-China Federation of Industry and Commerce, for example, reported a response rate of 93.9% ([All-China Federation of Industry and Commerce, 2009: 5](#)). The CHIP data have been used in a long list of published studies, and the survey design of the successive waves, and the characteristics of the resulting datasets, have been detailed in previous publications ([Eichen and Zhang, 1993; Li et al., 2008; Luo et al., 2013](#)).

##### 4.2. Measures

Our primary interest is in differences across occupations, in particular the advantages of occupations and statuses that were privileged prior to market reform, and the new cohorts of private entrepreneurs bred by market transition. We recoded the detailed occupational categories in the datasets into five broad groups: cadres, professionals, private entrepreneurs, white-collar employees, and blue-collar manual workers.<sup>6</sup>

Any analysis of the relationship between occupation and housing conditions must address an obvious problem: occupation is an individual characteristic, while housing is a household characteristic. There is inevitable measurement error, and to some extent conceptual ambiguity in characterizing the occupational status of a household—individuals within

<sup>3</sup> The 2007 survey indicated that housing assets continued to grow rapidly, more than doubling again between 2002 and 2007 ([Sato et al., 2013: 105](#)).

<sup>4</sup> The data from the 1988, 1995, and 2002 waves have been archived for public use; at this writing the first publications by the research team that conducted the 2007 wave have just been published ([Li et al., 2013](#)), and the data can be obtained through application.

<sup>5</sup> A fourth wave covered the year 2007, but unlike the 2002 wave does not include data on total household financial assets and it contains less complete information on housing assets ([Li et al., 2013](#)). The 2002 dataset is also preferable because it was conducted much closer to the time that housing privatization was completed, and therefore the housing assets are less affected by occupational differences in income that would have accumulated in the intervening years.

<sup>6</sup> Coding details may be obtained from the authors. The categories appear to be the same as those employed by [Logan et al. \(2009, 2010\)](#).



the household will in many cases have different occupational statuses. We considered several approaches to this problem. The most common approach is to define the household's occupational status as the occupation of the male household head. The rationale for this approach is that men are employed at higher rates than women, and they are much more likely than women to marry spouses with lower occupational status.<sup>7</sup> With this approach, only households headed by unmarried, divorced or widowed women will use the female household head's occupation. This is the approach to defining household occupational status employed in past studies of housing allocation (Walder, 1992; Logan et al., 1999, 2009, 2010).

In this paper we employ an alternative approach that exploits more fully the available information about the occupations of adult household members. We are concerned about cases where female adults have higher occupational statuses than their spouses. In the analyses reported below, we consider the occupational categories of cadre, professional, white collar, and blue collar to be ordinal measures, and code that household as the higher of the two occupations, when these are not identical for both spouses. The exception to this rule is the category "entrepreneur", which does not easily fit into an ordinal scale. Any household in which either the male or female household head reports "entrepreneur"—an owner-operated business establishment—will be considered as an entrepreneur household, regardless of the occupation of the spouse. This has the effect of increasing somewhat the size of the smallest occupational category.<sup>8</sup>

#### 4.2.1. Occupation

In the "cadre" category are administrators or managers in different levels of government, party agencies, state and collectively owned enterprises, and public institutions like hospitals, schools, and research institutes.<sup>9</sup> "Professionals" are individuals in staff positions that require educational credentials and specific skills, but who do not occupy decision-making positions that would place them in the "cadre" (manager) category. The category includes, for example, professors and teachers at all levels, doctors, nurses, lawyers, engineers, and researchers. "Private entrepreneur" includes two groups: those with ownership stakes in registered private businesses, and individual owner-operators. Private entrepreneurs do not receive state salaries and are outside the state's system of distribution. "White collar employees" work in sales and services, or in ordinary clerical positions. "Blue collar workers" are manual workers in both skilled and unskilled trades in manufacturing and mining.

#### 4.2.2. Education

Educational credentials are a proxy for "human capital" that many have identified as an individual characteristic rewarded more strongly in a market economy than in a traditional planned economy. However, research on inequalities under state socialism emphasized the fact that higher education was also well rewarded and in fact was increasingly becoming the foundation for social inequalities in socialist systems (Szelényi, 1978, 1983). Our measure for household education is the highest level of education attained, in number of years, of the household head or household head's spouse. Educational levels are highest for professional households, although they are almost as high among cadres (see Table A1).

#### 4.2.3. Party membership

The household is coded as having "party membership" if either the male or female household head is a member. This is a typical measure of a status that indicates some form of "political capital". Party membership is essentially a marker of some form of demonstrated political loyalty that extends back into the prior career for an unmeasured duration. Longitudinal studies have shown that it is not a status that wins immediate rewards, but that it enhances prospects for promotion into better-compensated positions later in the career, especially if party membership is attained while young (Walder, 1995; Li and Walder, 2001). Rates of party membership are by far the highest in the cadre category, close to 80% or above for all years, while party membership is lowest for the entrepreneur and blue collar categories, around 20% in 2002 (see Table A1).<sup>10</sup> As a separate variable, it is a rough measure of accumulated "political capital" in one's prior career.

#### 4.2.4. State sector

This dummy variable indicates employment in a government agency or state enterprise. The contrast categories are collective, private, and new forms of joint or foreign ownership. Under central planning, government agencies and large state enterprises received the bulk of investment for new housing stock, were able to provide better and larger housing for higher proportions of their employees (Bian, 1994; Walder, 1992). At the outset of housing privatization, the majority of housing to

<sup>7</sup> For example, in the 2002 survey, only 37% of the 849 cadre men were married to cadre or professional spouses, while 61% were married to white- or blue-collar spouses. Of the 249 cadre women, 71% were married to cadre or professional spouses, while only 25% were married to white- or blue-collar spouses.

<sup>8</sup> All of the analyses reported below were replicated using the standard male-oriented classification, and also using female-only occupations. The results of the analyses were very similar, except that the approach that we report in this paper revealed a somewhat clearer pattern of elite privilege. Results for alternative codings of household occupation are available on request.

<sup>9</sup> The codebook definition is "decision-makers in government, public enterprises, or public institutions".

<sup>10</sup> The overall percentage of party members in our households, over 40%, reflects the urban bias in party membership and the fact that we considered the party membership of either spouse. The nationally representative 1996 survey data analyzed by Walder et al. (2000) yields a rate of party membership of 30% for married men in the urban sample. We recognize that party membership may have been attained relatively late, even after the process of housing privatization begins, so there is a possible problem of causal order in interpreting this coefficient. Past studies have recognized this and have avoided the problem with life-history data and hazard rate models (Walder et al., 2000; Li and Walder, 2001). In our analysis party membership is a rough measure of political status, and does serve to differentiate party members from non-members, however imperfectly.

be privatized was held by these firms. This variable gauges the availability of privatized housing to employees based on their organizational affiliation.

#### 4.2.5. Controls

All of our models include a series of controls. Age of the household head, for example, varies across occupational categories and is closely related to seniority and experience, both related to housing allocations. We include two variables to control for age effects: age measured in years, and age squared, to gauge the likely diminishing positive impact of age as it advances. We include gender (a male dummy variable) to control for the impact of households that are headed by unmarried or widowed women. We control for the number of individuals in the household, which takes into account the demand for housing. The coefficients for these controls are not displayed in the tables and will not be interpreted. Finally, in order to control for unmeasured variation across regions in housing conditions and the pace and onset of housing privatization, we include a vector of dummy variables for each of the county-level jurisdictions in the sample.

#### 4.2.6. Outcomes

To estimate the impact of housing privatization on household wealth we estimate a series of models to assess different aspects of the process. “Housing ownership” is a binary variable that indicates whether the household owns one or more apartments. Housing ownership is an obvious measure of the impact of privatization, because it shifts drastically in the 15 years covered by the surveys. “Subsidized home purchase” is a binary variable that indicates whether a household purchased a home through a subsidy program sponsored by a work unit or local government. If the household does not own a home, or if it owns a home that was not obtained through a subsidized purchase program, the variable is coded “0”. Subsidized home purchase is a measure of inequality in the acquisition of public property.

“Net housing value” is the self-reported market value in current Chinese yuan of the home, if it is privately owned, less the unpaid balance of a mortgage or loan, if any.<sup>11</sup> Self-reported estimates of the market value of homes were highly problematic in the early waves of the survey, when rates of home ownership were very low and where housing markets were still in their infancy (Zax, 2003: 322–325). By the 2002 wave, however, close to 80% of surveyed occupants owned homes, and the allocation of public housing at subsidized rates had ceased several years before. The estimated price is an effort to take into account the quality and location of the housing. Interviewers asked respondents to estimate the current market value of their home. If respondents were unsure, interviewers helped to estimate the home’s value based on the price of comparable units in the neighborhood. Whatever inaccuracies remain in these self-reports is undoubtedly much smaller than in the early years of privatization. For this reason we use only the 2002 data on housing assets, which has been employed in a series of published studies (Li and Zhao, 2008; Meng, 2007; Sato et al., 2013; Zhao and Ding, 2008). Households that do not own homes have assets with a value of zero. Because our models use the natural log of housing value as the dependent variable, a value of 1 is added to all the observations in the dataset to ensure that households without housing assets remain in the analysis. Total household wealth is an enumeration of all of a household’s assets, both housing and non-housing (financial assets, fixed production assets, durable consumer goods, other assets). Descriptive statistics for these variables are in Table 1.

One possible problem with this approach is that we are likely to underestimate occupational differences because these elite occupational categories are relatively broad, and may include some households of upper middle rather than high status. The two elite categories together comprised 29.4% of the 1988 sample and 38.9% of the 2002 sample (Table A1). A more restrictive definition of elites would likely yield larger occupational differences.

Another possible problem is that we might overestimate occupational differences due to the “incumbency advantage” because not all of the group differences in post-reform housing assets can be attributed exclusively to privatization. The large increases in housing assets immediately after privatization, as prior analyses of these data by economists have shown, cannot be accounted for by increases in household income. However, occupational differences in housing assets will surely be due at least partially to income differences during the years that housing privatization took place.

Fortunately, these two potential biases work in opposite directions. The smaller the definition of the elite, the larger their likely post-reform advantages in housing assets. But their income advantages will also have been larger over the years of housing privatization, and therefore a higher percentage of their home equity advantages will have been due to savings from larger incomes. While a differently designed survey would be necessary to answer these questions more precisely, the fact that these biases work in opposite directions is reassuring.

### 4.3. Model estimation

We examine change through time in housing ownership, housing assets, and total household wealth by estimating separate regression models for various years. For market value of housing and total household wealth we estimate a regression model,  $\ln y_{it} = \beta_{0t} + \beta_{it}X_{it} + \varepsilon_{it}$ , where  $\ln y_{it}$  is the natural logarithm of the dependent variable for household  $i$  at time  $t$ .  $X_{it}$  is a vector of independent and control variables, with the category of “blue collar worker” excluded as the contrast category for the other occupational groups. In this specification,  $\exp(\beta_{it}) - 1$  will be the percent change in the dependent variable (housing value, total household wealth) that results from a one-unit change in a continuous independent variable

<sup>11</sup> In the 2002 wave of the survey, close to 9% of households had mortgages or loans.

(such as years of education) or from a given category relative to a reference category (for example, party members versus non members, or cadres versus blue-collar workers).

For equations with a binary dependent variable—home ownership and subsidized housing purchase—the model is  $\ln \frac{\Pr(y_{it}=1)}{1-\Pr(y_{it}=1)} = \beta_{0t} + \beta_{it}X_{it} + \varepsilon_{it}$ ; where  $\Pr(y_{it}=1)$  is the probability for household  $i$  at time  $t$  (1988, 2002) of owning a private home or purchasing one through a subsidy program.  $X_{it}$  includes the same variables as the first equation. We provide odds ratios ( $\exp(\beta_{it})$ ) in the tables, which are readily interpretable in percentage terms.

## 5. Findings

### 5.1. Before privatization: initial conditions

How large were occupational differences in housing conditions before market reform? Table 2 displays occupational differences in housing quality and ownership on the eve of privatization in 1988. Cadre households lived in apartments that were 22% larger than average and 37% larger than blue-collar workers. The only occupational group that came close to the housing space enjoyed by cadres at that time was the small group of private entrepreneurs. Before privatization, private entrepreneurs were by far the most likely group to own their own homes. They were close to four times more likely to own their own homes (31.2%) than cadres or professionals (8.6%) (see Table 2).

While cadre households were, along with professionals, the least likely occupational category to own their homes, they were the most likely to have private kitchens and bathrooms, the least likely to be limited to one room, and had the highest index of household quality.<sup>12</sup> Blue-collar households were three times more likely to be limited to one room than cadre households, and all other categories were twice as likely. Cadre households were three times more likely to have private bathrooms than blue-collar households. Private entrepreneurs, by contrast, were the least likely to have private kitchens and had housing of a quality that was on a par only with blue-collar workers (Table 2). In other words, cadre households, and to a lesser extent professionals, still enjoyed better housing at little cost, while entrepreneurs tended to purchase relatively large but generally lower quality homes.

In the context of an economic system and ideology that at one time emphasized material equality to an extreme degree, these are striking differences. From a broader perspective, however, these differences are not particularly large. Cadre households had apartments that averaged only 37% larger than blue-collar households. More than 85% of cadre households still did not have private bathrooms, more than 10% still lacked private kitchens, and some 7% were still limited to one room (calculated from Table 2). The backdrop to housing privatization, therefore, is one of relatively modest differences in the size and quality of public housing, and relatively low standards across the board. In the analyses that follow we employ data from relevant years of the survey to estimate a series of models, tracing the sequences through which differences in these housing conditions were translated into household wealth. First, we examine occupational differences in access to subsidized home purchases—the mechanism through which privatization was carried out. Second, we analyze the changing determinants of home ownership. Finally, we trace the resulting changes in the market value of private housing across occupations, how this has influenced the overall distribution of wealth.

### 5.2. Access to subsidized home purchase

Housing privatization drastically increased the percentage of urban households that owned their own homes: from 14% in 1988 to 42% in 1995 to 78% in 2002 (Table 1). This rapid shift was primarily due to the subsidized home purchase programs. “Commodity housing” purchased on the open market was on average 8 times more expensive per meter than public housing purchased by current occupants (Li and Zhao, 2008: 106; Zhao and Ding, 2008: 128). Even if one assumes that the quality of the new “commodity” housing is superior to that of older public housing, the discounts offered through the subsidized program are very large. The average price paid for current homes in our sample was close to 50% of the current estimated market price. The subsidy program was clearly the core of the process that transferred public property into private wealth.

Table 3 shows the relative odds that different occupational groups purchased a home through the subsidy program. Clearly there is only one strong occupational predictor of a home purchase through a subsidy program—households headed by at least one entrepreneur were only some 65% as likely as others to have purchased a home through this program (model 3). Before controlling for education, party membership, and state sector employment, cadre and professional households have a somewhat greater likelihood of having purchased through this program (34%), but after controlling for education, Party membership and state sector employment (models 2 and 3) the advantage disappears. Model 3 indicates that access to subsidized home purchases was relatively equal across occupational categories, especially among those employed in the state sector. State sector employees were roughly 90% more likely to have purchased through this program, and households headed by private entrepreneurs much less likely than all others. Essentially, the subsidy program was broadly available to registered urban residents, especially those who worked in the state sector. Those unaffiliated with state sector

<sup>12</sup> The index of housing quality is a simple count of which of the following facilities the apartment has: running water, private bathroom with toilet, private kitchen, built-in heating system, and piped gas. The index ranges from a high of 5 to a low of 0.



**Table 2**

Housing conditions and home ownership by occupation, urban China, 1988. Source: Chinese Household Income Project (1988).

Occupation	Average housing space (sq. meters)	One room only (percent)	Private kitchen (percent)	Private bathroom (percent)	Home ownership (percent)	House quality index (mean)	Number of cases
Cadre	51.7	6.9	88.9	13.7	8.5	2.6	1056
Professional	42.6	13.6	85.4	9.7	8.6	2.4	1713
Private entrepreneur	48.1	15.0	72.3	9.8	31.2	2.1	174
White collar employee	43.3	15.5	83.2	9.4	12.5	2.4	2262
Blue collar worker	37.8	23.6	76.6	4.3	16.7	2.1	2913
Sample mean	42.5	16.9	81.8	8.2	13.1	2.3	8118

The “housing quality index” is a simple count, ranging from 0 to 5, of whether an apartment has running water, private bathroom, private kitchen, central heating, and piped gas.

organizations—especially private entrepreneurs—had little access to the programs. This also applies to rural migrants, as Logan et al. (2009, 2010) have shown.<sup>13</sup>

### 5.3. Determinants of home ownership

Table 4 shows how access to subsidized home purchase altered patterns of home ownership. In 1988 entrepreneur households were by far the most likely to own their homes, but by 2002 they considerably less likely to own homes than all but blue-collar households. The higher-status occupations (cadre and professional) were considerably less likely even than blue collar workers to own their own homes in 1988, but by 2002 they were considerably more likely to do so, even after controlling for party membership, education, and state sector employment. There are similar changes in the effect of other variables. Each additional year of education reduced the odds of home ownership by some 7–8% in 1988, but increased it by 10% in 2002. Households headed by at least one party member had just over half the odds of owning a home than others in 1988, but by 2002 they were much more likely to do so than others. Finally, households with a state sector affiliation had barely half the odds of owning a home than others in 1988, but they were around 50% more likely than others by 2002 (columns 3 and 6).

The fact that households headed by individuals in elite occupations, with higher levels of education and rates of party membership, were significantly less likely to own homes in 1988 is an expression of their preferential access to highly subsidized and higher quality housing from their employers or state agencies. They were more likely to have been granted new government apartments, while lower status occupations were more likely to remain in older homes that predated the socialist era, and that were a family legacy. The greater prevalence of private home ownership for entrepreneur and blue-collar households echoes Széleányi’s findings about Hungary in the 1970s, and his argument that supplementary market mechanisms in a planned economy tend to equalize the inequalities inherent in bureaucratic distribution (Széleányi, 1983). The rapid privatization of the urban housing stock led to sharp changes in the determinants of home ownership—the groups least likely to own their own homes in 1988 became the most likely to do so, and the strongly negative association with party membership and education become positive. The entrepreneurs that had benefited the most from the early opening to private enterprise were unable to participate in privatization programs. Blue-collar workers appear to have benefited from home privatization significantly less than other occupations, especially when compared with cadres and professionals.

### 5.4. Home equity and household wealth

The final step in our analysis is to estimate the impact of housing privatization on household wealth. The market value of housing was more than half of total household assets in 2002. Columns 1–3 in Table 5 shows estimates of the determinants of the market value of private housing less any outstanding balances on mortgages (“net housing assets”) in 2002, by which point the privatization process was almost complete.

The gross occupational differences in 2002 are large (column 1). Cadre and professional households have housing assets that are more than double the value of blue-collar households. Entrepreneur households, by contrast, have housing assets that are not significantly different from blue-collar households. When controls for the education and party membership of the household head are introduced (column 2), the net advantages of the higher status occupations are reduced, but are still 55% higher than those of blue-collar households. In this model, the four additional years of education that distinguishes a college from a high school degree adds an estimated 63% to housing assets ( $1.13^4 = 1.63$ ). Having at least one party member in the household has a positive impact of 57%, and state sector employment doubles the magnitude of housing assets.

<sup>13</sup> Logan et al. (2010) found evidence that higher status occupations enjoyed larger implicit subsidies on their purchases of public housing. We are unable to examine this question with the CHIP data.

**Table 3**

Odds ratios from logistic regression of subsidized home purchase, urban China, 2002. Source: Chinese Household Income Project (2002).

	(1)	(2)	(3)
Cadre	1.34*** (0.15)	1.20 (0.15)	1.08 (0.14)
Professional	1.20* (0.12)	1.10 (0.12)	1.02 (0.12)
Entrepreneur	0.56*** (0.09)	0.54*** (0.09)	0.65*** (0.10)
White collar	1.06 (0.11)	0.99 (0.11)	0.92 (0.10)
Education (years)		1.02 (0.02)	1.01 (0.02)
Party member		1.10 (0.09)	1.07 (0.09)
State sector			1.89*** (0.19)
-2Log-likelihood	4761.52	4759.66	4717.6
N	4990	4990	4990

Note: All models include controls for the age and gender of the household head, the size of the household, and a vector of dummy variables for the county-level sampling unit. The contrast category for the occupational variables is blue-collar workers. The contrast category for state sector is non-state sector. Robust standard errors in parentheses.

\*  $p < 0.1$  (two tailed).\*\*  $p < 0.05$  (two tailed).\*\*\*  $p < 0.01$  (two tailed).

What is the source of these higher home values? In column 3, we add controls for housing age and housing quality. Higher status households were favored in housing distributions under the old system, which would result in more recently allocated (i.e. newer) apartments, and apartments that had more facilities, as indicated by the housing quality index in Table 2. The importance of these advantages in generating greater household wealth are clearly indicated by the strong impact of these controls on housing assets, and by the fact that they completely eliminate the net advantages of higher status occupations. This suggests that the advantages of higher status occupations evident in column 2 are an expression of the newer and better quality apartments that such households were allocated under the earlier system. This corroborates a recent study by Logan et al. (2010), who found that differences in housing quality and age created advantages for higher status occupational groups, and provides an estimate for the value of these advantages in terms of household wealth.

However, another look at the data suggest that even these results may overstate relatively modest occupational advantages. Table 6 replicates the analysis in Table 5 by including only those households that obtained ownership through subsidized purchasing programs as part of the privatization of their public housing. In this subsample, the advantages for cadre and professional households in columns 1 and 2 of Table 5 disappear in the corresponding columns in Table 6. This suggests that the subsidized purchase program worked to reduce the inequalities in housing assets due to income

**Table 4**

Odds ratios from logistic regression of home ownership, urban China, 1988 and 2002. Source: Chinese Household Income Project (1988, 2002).

	1988			2002		
	(1)	(2)	(3)	(4)	(5)	(6)
Cadre	0.42*** (0.06)	0.80 (0.12)	0.82 (0.13)	2.29*** (0.27)	1.41*** (0.19)	1.33** (0.18)
Professional	0.47*** (0.05)	0.79* (0.10)	0.84 (0.11)	1.99*** (0.21)	1.31** (0.15)	1.26* (0.15)
Entrepreneur	1.76*** (0.35)	2.08*** (0.43)	1.55** (0.33)	0.90 (0.13)	0.79 (0.12)	0.90 (0.14)
White collar	0.63*** (0.06)	0.91 (0.09)	0.94 (0.09)	1.58*** (0.17)	1.22* (0.14)	1.17 (0.13)
Education (years)		0.92*** (0.01)	0.93*** (0.01)		1.10*** (0.02)	1.10*** (0.02)
Party member		0.56*** (0.05)	0.58*** (0.05)		1.34*** (0.12)	1.31*** (0.11)
State sector			0.51*** (0.05)			1.51*** (0.15)
-2Log-likelihood	5329.06	5248.42	5201.32	4604.32	4545.4	4527.84
N	7781	7781	7781	5617	5617	5617

Note: All models include controls for the age and gender of the household head, the size of the household, and a vector of dummy variables for the county-level sampling unit. The contrast category for the occupational variables is blue-collar workers. The contrast category for state sector is non-state sector. Robust standard errors in parentheses.

\*  $p < 0.1$  (two tailed).\*\*  $p < 0.05$  (two tailed).\*\*\*  $p < 0.01$  (two tailed).

**Table 5**

Exponentiated coefficients from linear regression of household assets (ln), urban China, 2002. Source: Chinese Household Income Project (2002).

	Net housing assets			Total assets		
	(1)	(2)	(3)	(4)	(5)	(6)
Cadre	2.15*** (0.39)	1.55** (0.29)	1.00 (0.18)	1.54*** (0.07)	1.36*** (0.06)	1.22*** (0.05)
Professional	1.86*** (0.32)	1.59*** (0.28)	1.18 (0.19)	1.33*** (0.06)	1.25*** (0.05)	1.16*** (0.05)
Entrepreneur	0.86 (0.22)	1.02 (0.27)	0.88 (0.22)	1.35*** (0.09)	1.45*** (0.10)	1.40*** (0.09)
White collar	1.63*** (0.28)	1.35** (0.24)	1.03 (0.17)	1.25*** (0.06)	1.16*** (0.05)	1.09** (0.05)
Education (years)	1.16*** (0.03)	1.13*** (0.03)	1.05** (0.02)	1.08*** (0.01)	1.07*** (0.01)	1.05*** (0.01)
Party member		1.57*** (0.20)	1.27** (0.15)		1.18*** (0.04)	1.12*** (0.03)
State sector		1.95*** (0.33)	1.38** (0.21)		1.33*** (0.06)	1.22*** (0.05)
Housing age			0.93*** (0.01)			0.98*** (0.00)
Housing quality index			3.09*** (0.22)			1.33*** (0.02)
R <sup>2</sup>	0.20	0.20	0.30	0.20	0.21	0.30
N	5809	5809	5809	5809	5809	5809

Note: All models include controls for the age and gender of the household head, the size of the household, and a vector of dummy variables for the county-level sampling unit. The contrast category for the occupational variables is blue-collar workers. The contrast category for state sector is non-state sector. Robust standard errors in parentheses.

\*  $p < 0.1$  (two tailed).

\*\*  $p < 0.05$  (two tailed).

\*\*\*  $p < 0.01$  (two-tailed).

differences across occupations and the ability given to higher income households to purchase commodity housing. This is consistent with our earlier presentation, which has shown broad and relatively equal access to home purchase schemes among registered urban residents, and relatively modest differences in housing space and housing quality in the earlier bureaucratic system.

## 6. Interpreting the results

What is the overall impact of housing privatization on the distribution of household wealth? This question can be answered by examining *total* household assets in relation to the assets represented by the value of the home. In columns 4–6 of Table 5, we see that gross occupational differences (column 4) appear to be broadly similar to those for housing value (column 1).<sup>14</sup> But there is one major difference—private entrepreneurs have levels of *overall* wealth that are equal to those of the elite occupations, whereas their housing assets are no larger than those of blue-collar workers.<sup>15</sup> Table 5 suggests that the advantages that elite occupations derived from the privatization process permitted them to accumulate assets roughly equal to those of private entrepreneurs, without having to leave secure salaried jobs and take the risks associated with entrepreneurship.

However, Table 6 calls such a conclusion into question. When we examine only differences across households who obtained housing through privatization programs, we see virtually no significant occupational differences in housing values. Instead, party membership and state sector—two variables correlated with privileged organizations in the bureaucratic economy—are the only significant predictors of housing values in this subgroup. This suggests, instead, that the primary determinants of inequality in housing values was access to subsidy programs, and attachment to a state sector organization that provided more housing resources to their employees prior to market reform. The fact that differences in estimates for total household assets in columns 4–6 are virtually identical in Tables 5 and 6 suggests that occupational differences in total household wealth must primarily be due to the accumulation of larger incomes through time for the elite occupations—including private entrepreneurs.

On what basis do we judge the magnitudes of these occupational differences? One standard is to compare them with the net advantage for all those with state sector employment (Table 5, column 2). The net advantage of cadres and professionals over blue-collar (and entrepreneur) households is more than 1.5 times—similar in magnitude to the net advantage that accrues to employment in the state sector. This implies, holding all other household characteristics constant, a blue-collar

<sup>14</sup> Using the Chow test (1960), we find that the difference between the coefficients of cadres for net housing asset and total asset (model 1 vs. model 4) is significant with  $\chi^2(1) = 16.79$ ,  $p < 0.01$ , so is the difference between those of professionals ( $\chi^2(1) = 20.22$ ,  $p < 0.01$ ), entrepreneurs ( $\chi^2(1) = 2.86$ ,  $p < 0.05$ ), and white collar workers ( $\chi^2(1) = 8.36$ ,  $p < 0.05$ ).

<sup>15</sup> According to model 6 of Table 5, entrepreneurs' total assets are not statistically different from cadres' ( $t = -0.70$ ,  $p = 0.482$ ) but are significantly different from professionals' ( $t = -1.66$ ,  $p = 0.098$ ).

**Table 6**

Exponentiated coefficients from linear regression of household assets (ln), urban China, 2002, for households that purchased homes through subsidy program. Source: Chinese Household Income Project (2002).

	Net housing asset			Total asset		
	(1)	(2)	(3)	(4)	(5)	(6)
Cadre	1.20 (0.19)	1.00 (0.17)	0.82 (0.14)	1.42*** (0.05)	1.30*** (0.05)	1.21*** (0.05)
Professional	1.13 (0.18)	1.04 (0.17)	0.92 (0.15)	1.21*** (0.05)	1.16*** (0.05)	1.12*** (0.05)
Entrepreneur	1.01 (0.27)	1.03 (0.28)	1.01 (0.26)	1.30*** (0.09)	1.33*** (0.09)	1.33*** (0.08)
White collar	1.30 <sup>*</sup> (0.20)	1.17 (0.19)	1.04 (0.16)	1.15*** (0.05)	1.10*** (0.05)	1.06 (0.04)
Education (years)	1.07*** (0.02)	1.05*** (0.02)	1.02 (0.02)	1.05*** (0.01)	1.05*** (0.01)	1.03*** (0.01)
Party member		1.39*** (0.16)	1.30*** (0.14)		1.15*** (0.03)	1.12*** (0.03)
State sector		1.32 <sup>*</sup> (0.22)	1.18 (0.19)		1.20*** (0.06)	1.15*** (0.05)
House age			0.94*** (0.01)			0.98*** (0.00)
House quality index			1.75*** (0.14)			1.24*** (0.03)
R <sup>2</sup>	0.29	0.29	0.33	0.29	0.30	0.37
N	3657	3657	3657	3657	3657	3657

Note: All models include controls for the age and gender of the household head, the size of the household, and a vector of dummy variables for the county-level sampling unit. The contrast category for the occupational variables is blue-collar workers. The contrast category for state sector is non-state sector. Robust standard errors in parentheses.

<sup>\*</sup>  $p < 0.1$  (two tailed).

<sup>\*\*</sup>  $p < 0.05$  (two tailed).

<sup>\*\*\*</sup>  $p < 0.01$  (two-tailed).

household in the state sector would have a predicted level of home equity roughly equal to that of a cadre who worked in the collective sector. If that cadre-headed household had 4 more years of education than the blue-collar household, the predicted advantage in housing value becomes 63% ( $1.13^4 = 1.63$ ). If the same cadre household head is a party member, and the blue-collar household head is not, the predicted advantage is more than double ( $1.63 \times 1.57 = 2.56$ ).

More telling still is a comparison with occupational inequalities in established market economies. The mean housing assets for cadre households was 89,654 yuan in 2002 (\$14,191 at current exchange rates); and for the blue-collar household, 58,211 (\$9,214)—a ratio of 1.54 to 1. These are much smaller differences than the gap between managerial and professional personnel and manual or service workers in developed market economies. In the United States the estimated median net wealth for managerial and professional personnel was about US\$124,000 and US\$115,000 respectively, and was only US\$19,000 for manual workers in the year 2000—ratios of 6.5 to 1 and 6.1 to 1, respectively (Keister, 2005:178). By the standards of established market economies, occupational differences in household wealth after privatization in China are still very small—despite the clear advantages of higher status occupations (see also Sato et al., 2013: 129).

These differences, further, are only partly due to the conversion of public housing into private home equity. They are surely due in large part to the higher incomes of the elite occupations. Analyses of household income with these same data (results not shown) reflect considerable increases in occupational income differences between 1988 and 2002. The net income advantage of cadre and professional households increased from 9% in 1988 to 28% in 2002. The net impact of party membership on household income increased from 4% in 1988 to 11% in 2002. And each year of education had a net impact on household income of 1% in 1988, but increased to 4% in 2002.<sup>16</sup> These are still relatively modest differences in household incomes by the standards of long-established market economies. But it is nonetheless likely that at least part of the elite advantages in home equity after privatization is due to an increase in household income differences that occurred during the period when housing privatization took place.

## 7. Conclusions

We have found strong evidence of something that past writers have characterized variously as the “incumbency advantage” or the “commodification of bureaucratic privilege.” This is essentially the same conclusion drawn by Logan et al. (2010), who found that the winners in the privatization program were primarily those who previously enjoyed privileges in the earlier system of bureaucratic distribution. What we have added to this picture with CHIP data is an estimate of the monetary value of these elite advantages in terms of household wealth. The most striking inequalities in the earlier studies employing census data were the large disadvantages of migrants households, portions of the urban population largely excluded from the CHIP

<sup>16</sup> Results are available on request.

dataset employed in our analysis. The disadvantages of the recent rural migrants are analogous to those of the first generation of urban private entrepreneurs: those excluded from urban public housing missed.

Our primary interest is in the impact of privatization when we are considering a form of public property where “incumbency” was very widely distributed. Our core finding is that there was a clear incumbency advantage for cadre and professional households, which appears to be due primarily to the newer, higher quality, and somewhat larger apartments they were allocated in the previous bureaucratic system. These quality differences, which are likely also to indicate unmeasured differences in the desirability and location of neighborhoods, account for sizeable differences in home equity in 2002—a two-fold advantage for cadre and professional households over blue-collar and entrepreneurs.

On the other hand, occupational differences in *total* household wealth were smaller—which suggests that higher percentages of household assets are initially held in the form of home equity for higher status households. There was broad participation in the subsidized privatization program across all occupational groups, and employment in the state sector led to a large premium in home equity across all those employed in that sector. The only group that was completely bypassed in this process was the small group of private entrepreneurs (and of course rural migrants), who lacked state sector employment and who already had the highest rates of home ownership before housing reform. Despite the premium that elite occupations derived from this process, in comparison with inequalities of wealth in established market economies, these initial differences in household wealth are actually quite modest. This initial outcome is surely due to the fact that physical differences in housing space and quality were relatively modest in planned economies relative to their market counterparts.

We should keep in mind that these findings are for the year 2002, which was near the end of the privatization process. It is possible that the rapid rise in real estate prices over the subsequent decade magnified these initially modest occupational differences. Urban housing prices increased rapidly after 1998, and the average national price of new commercial housing grew 2.4-fold in the decade after 2002 (State Statistical Bureau, 2012: 213). The average home value in the urban CHIP survey for 2007 was more than double that for 2002 (Sato et al., 2013: 105). It is possible that the occupational differences in the quality of public housing purchased at subsidized prices translated into larger differences in home equity values as housing prices subsequently escalated. As time progresses, however, home equity values become increasingly entangled with widening occupational income disparities. Real estate, especially residential apartments, became the primary form of invested wealth in urban China, because China’s stock and bond markets are undeveloped and extremely volatile, and interest rates on savings accounts at state banks are kept artificially low. It is far from clear that the initial quality of public housing will turn out to be a major determinant of differences in household wealth after more than a decade of rapidly rising income inequality and inflation of housing prices. What is manifestly clear, even with data for 2002, is that large percentages of existing urban populations were given access to subsidized home purchases, a program that transferred home equity to large percentages of urban households, permitting them to participate in nascent real estate markets.

In sum, the much discussed “incumbency advantage” appears to be substantial in the case of housing privatization, but in a broader comparative sense did not translate into large occupational inequalities in household wealth by 2002. Housing inequalities under state socialism have long been greatly emphasized in the literature, home equity rapidly became the largest component of household wealth after privatization, and recent analyses of these same data have uncovered large increases in measures of overall wealth inequality due to the post-privatization value of homes. The resulting inequalities were limited by the fact—despite obvious inequalities in the process—that large percentages of urban populations enjoyed use rights over public housing that was translated into household wealth at subsidized rates. Housing is a state asset that was much more broadly distributed across populations than productive enterprises, mineral rights, and financial resources, which are the foundation for much larger accumulations of private wealth. Housing privatization is therefore likely to be a limiting lower-boundary case of “incumbency advantage”. The much smaller percentages of the population who manage to obtain control over productive assets will enjoy advantages that dwarf the wealth advantages uncovered in the case of housing. These advantages of incumbency are much more difficult to measure systematically. They are likely to be very large indeed, but of necessity restricted to a tiny percentage of the former communist-era elite.

## Appendix A

See [Table A1](#).

**Table A1**

Education and party membership by occupation, urban China, 1988, 2002. Source: [Chinese Household Income Project \(1988, 2002\)](#)

	1988				2002					
	Occupation		Education	Party member	State sector	Occupation		Education	Party member	State sector
	(N)	(%)	(years)	(%)	(%)	(N)	(%)	(years)	(%)	(%)
Cadre	1056	13.0	11.5	86.7	94.5	1151	19.4	12.8	83.8	95.6
Professional	1713	21.1	12.7	51.8	96.4	1440	24.3	13.3	52.1	88.0
Entrepreneur	174	2.1	9.1	32.9	39.1	414	7.0	10.9	32.9	38.4
White collar	2262	27.9	10.3	53.7	89.9	1158	19.5	11.7	55.0	85.7
Blue collar	2913	35.9	8.5	15.0	80.9	1768	29.8	9.7	24.1	71.4
Total	8118	100.0	10.3	43.3	87.5	5931	100.0	11.6	49.1	80.5



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