Urban Villages in China: A 2008 Survey of Migrant Settlements in Beijing

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Abstract: A team of Beijing-based urban planning specialists is joined by a noted American geographer to present the results and analyze their 2008 survey of migrant settlements in China's capital city. The paper examines the living and work conditions as well as housing consumption behavior of migrants in Chinese cities, focusing on *chengzhongcun* or urban villages—rural settlements that have been transformed into poor living spaces for migrant workers. It finds that although migrant workers are willing to pay the same or higher rent per unit of space, they consume much smaller dwelling spaces than local residents. Estimations of the Mincerian wage equation and of a housing demand equation show that migrants' small space consumption is a function not only of low income but also of a reluctance to spend their earnings in the city. The findings reinforce the notion that migrant workers consider the city as a place to work rather than a home in which to live. *Journal of Economic Literature*, Classification Numbers: J610, O150, R210, R230. 14 figures, 5 tables, 34 references, 1 appendix. Key words: China, Beijing, urban villages, *chengzhongcun*, rural-urban migration, urbanization, housing, rent, rural settlements.

INTRODUCTION

Over the past three decades, China has experienced rapid urban growth and massive rural-urban migration. The share of urban population increased from 21 percent in 1982 to 45 in 2007 and is expected to exceed 50 percent by 2015 (Zhou and Ma, 2005; Guangming ribao, 2006; National Bureau, 2008). In 2007, there were 36 cities in China with a population of two million or more (National Bureau, 2008). Rural-urban migration is responsible for roughly 70 percent of the country's urban population growth (Zhang and Song, 2003).

Such rapid urbanization has transformed the spatial and social landscapes of Chinese cities. One of the most prominent imprints of rural-urban migrants is *chengzhongcun*—literally "villages in the city," also translated as "villages amid the city," "villages encircled by the city," and "urban villages" (e.g., Zhang et al., 2003; Wu, 2007; Tian, 2008). Whichever

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translation is used, these terms describe rural villages that have been surrounded or otherwise encroached upon by urban expansion. For the sake of simplicity, we use in this paper the term "urban villages" to refer to *chengzhongcun*.[2]

While farmland in villages on city fringes may have been acquired by city governments, land for housing continues to be owned by village collectives and is allocated to village residents. However, many urban village residents have given up farming and have instead built or expanded housing to rent to migrants. To these villagers, rent has replaced agriculture as the main source of income. Urban villages can be found most commonly on the fringes of cities that have experienced significant expansion and received large numbers of migrants. These urban fringes surrounding Chinese cities have been referred to variously as urban outskirts, peri-urban areas, and suburban areas (Lin, 2006; McGee et al., 2007; Zhou and Logan, 2008). Hundreds of urban villages exist in large cities such as Guangzhou and Shenzhen. According to You-tien Hsing (2009), there were 139 urban villages in Guangzhou in 2006, and urban villages in Guangzhou and Shenzhen make up more than, respectively, 20 and 60 percent of their planned areas providing homes to 80 percent of migrants in these cities.

The emergence of urban villages is an outcome not only of rapid urbanization but also of the persistent divides between rural and urban citizenships and between rural and urban administrations in China (Zhang and Song, 2003; Song et al., 2008). From the demand side, millions of rural migrants working in cities have generated enormous demand for inexpensive housing. Most rural migrants are excluded from the formal housing market because: (1) without urban *hukou* (household registration) they are not eligible for low-cost affordable housing subsidized by city governments; and (2) they cannot afford "commodity housing" in the private housing market. Therefore, migrants most commonly live in employer-provided housing such as factory dorms or rent rooms in urban villages.

From the supply side, as cities expand, municipal governments are motivated to acquire farmland for urban use. To minimize compensation for villagers' housing and relocation and to ease the process of land acquisition, city governments tend to acquire farmland only and leave or return the land designated for housing—"reserved housing sites" (*zhaijidi*)—to village collectives (Hsing, 2009). Typically, these "rural" land parcels are spatially scattered and receive no public services from city governments. But because villagers are not required to pay a land lease fee for using these parcels, the cost and rent of housing built on such land is low and especially attractive to migrant workers who cannot afford high rent. To maximize rental income, villagers build high-density houses and add floors and structures haphazardly and even illegally, resulting in slum-like living environments (Tang and Chung, 2002). Unlike shantytowns in Latin America, however, urban villages in Chinese cities are not a result of land invasion and self-constructed housing by migrants (Mobrand, 2006). Rather, they represent a match between migrants' demand for cheap housing and the supply of low-cost housing in villages encroached upon by urban expansion.

Notwithstanding their positive role in providing housing to migrants, urban villages are of great concern to city governments. High crime rates, inadequate infrastructure and services, and poor living conditions are just some of the problems in urban villages that threaten public security and management (Zhang, 2002). Yet eliminating urban villages altogether is not a sustainable solution, unless provisions to re-house migrants are in place. Therefore, a

[2]Note that our usage of the term "urban village" differs from the planning concept influenced by Jane Jacobs (1961) that advocates urban living marked by self-containment, community interaction, and reduced reliance on automobiles. The latter conception of urban village is seen as an alternative to the urban sprawl that since WWII has characterized many Western cities.

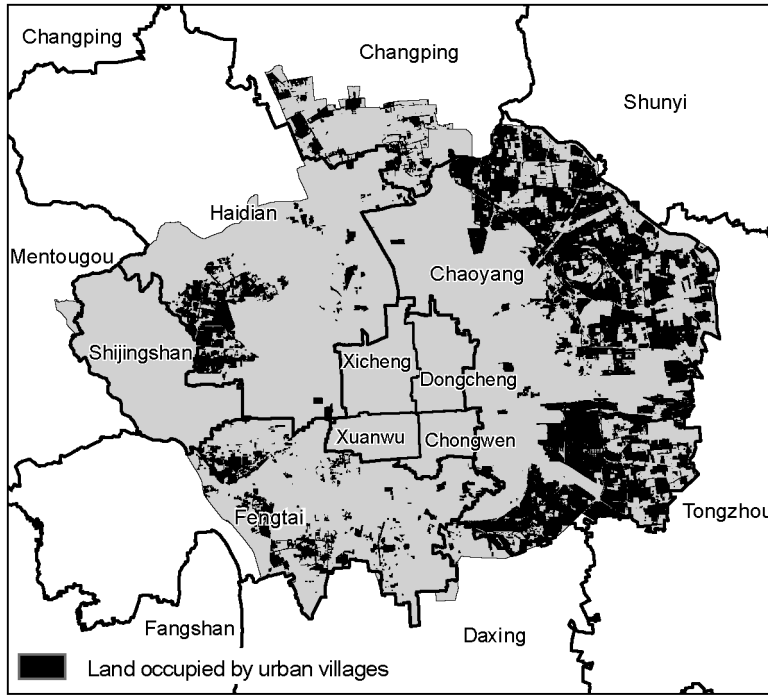


Fig. 1. Distribution of urban villages in the Beijing Metropolitan Area. *Source*: The Second Land Survey of Beijing, conducted by the Beijing Municipal Land Authority in 2007.

better understanding of the housing demand and housing choice behaviors of migrants is crucial for developing effective strategies to better house migrants.

Drawing from a survey of 50 urban villages and 756 migrants in Beijing conducted in September 2008, this paper aims at providing fresh information on the living and employment conditions of migrants in the city, with a special focus on understanding their rationale for choosing urban villages as places to live. In the next section, we describe urban villages in Beijing and our survey. This is followed by a descriptive and statistical summary of the surveyed urban villages and migrants. We then turn to migrants' housing condition and housing consumption behavior, followed by econometric models of wage and housing demand. The concluding section summarizes our findings and discusses their policy implications.

URBAN VILLAGES IN BEIJING

As defined by the Beijing Municipal Commission of Urban Planning, the Beijing Metropolitan Area (BMA) is 1,086 km^2 in size (see the area shaded in light grey in Fig. 1) and consists of four urban districts (Dongcheng, Xicheng, Chongwen, and Xuanwu) and parts of five suburban districts (Chaoyang, Haidian, Fengtai, Shijingshan, and Changping).

Because urban villages are not formally considered part of the urban economy—and thus excluded from urban statistics collection—information about their number and spatial distribution is not publicly available. Working with Beijing Municipal Land Authority, we

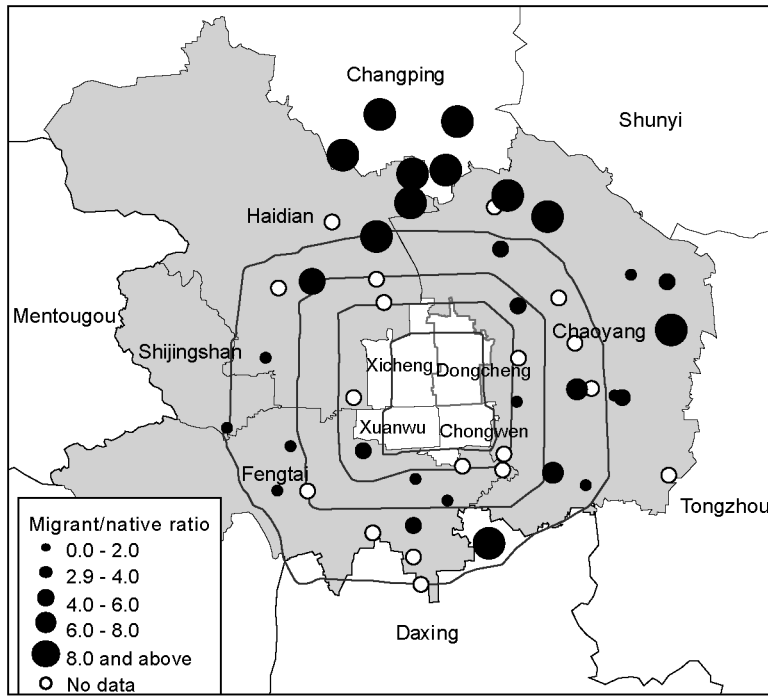


Fig. 2. The 50 sampled sites in the Beijing Urban Village Survey. Grey areas refer to the four suburban districts adjacent to Beijing's four urban districts. Open (white) circles refer to urban villages in which numbers for migrant and native populations are not available (see Table A1).

have obtained a detailed list of urban villages and the land parcels occupied by these villages. As of 2008, there were 867 urban villages in BMA, mostly located in the suburban districts (see the areas shaded black in Fig. 1). These urban villages occupy 181 km^2, accounting for 49.5 percent of the total residential land in BMA. Despite their informal status in the housing market, urban villages clearly play a prominent role in the provision of housing in Beijing.

Our empirical analysis is based on a questionnaire survey conducted in September 2008 and administered by Beijing Municipal Institute of Urban Planning and Design and Tsinghua University's Institute of Real Estate Studies (hereafter Beijing Urban Village Survey). We employed a two-stage sampling method. In the first stage, 50 urban villages were selected randomly from the total of 867 in BMA (Fig. 2 and Table A1 in the Appendix). In the second stage, we selected 15–20 migrants in each of the 50 urban villages. To increase representativeness, we selected migrants from different parts of the villages so that they were approximately evenly distributed spatially. Considering that most migrants have low levels of educational attainment, our interviewers asked them questions and filled out their questionnaires rather than asking them to do it themselves. The survey yielded 756 completed and valid questionnaires. In each urban village, we also interviewed village officials for general information.

Information from village officials shows that in most of the 50 selected urban villages, migrants (individuals who do not have urban or rural *hukou* in Beijing) outnumber natives (individuals who have urban or rural *hukou* in Beijing) (Fig. 2 and Table A1). In fact, most

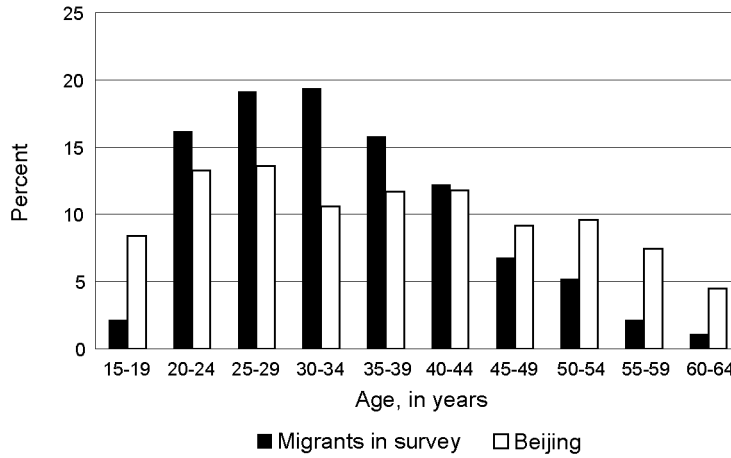


Fig. 3. Age distribution of migrants and Beijing's permanent population. *Sources*: Beijing Urban Village Survey; Beijing Bureau (2008).

Table 1. Gender Composition of Migrants and Beijing's Population, 2000–2008 (percent)

Inhabitants of Beijing	Male	Female
Migrants in 2008 survey	66.9	33.1
Migrants in 2000 Census	62.4	37.6
Permanent residents in 2007	50.8	49.2

Sources: Compiled by authors from Beijing Urban Village Survey; National Bureau, 2002; and Beijing Bureau, 2008.

villages have a large migrant–native ratio, indicating that the majority of people living in the urban villages are renters. Among the 50 urban villages we surveyed, there are 5.2 migrants for every native. The migrant–native ratio varies among villages. Among the several urban villages in the north and east that have especially large ratios, some are in relative proximity to low-skill industrial clusters that employ large numbers of migrants and are therefore attractive to them as places to live.

DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS OF MIGRANTS

Most migrants in urban villages are young men, who have low levels of educational attainment and low income; they work in the tertiary sector, hold rural *hukou*, and are from adjacent or poor provinces. In our survey, men accounted for 66.9 percent of migrants residing in the urban villages, a proportion much higher than the 50.8 percent of men among Beijing's permanent population as of 2007 and also higher than the 62.4 percent of men among migrants in the BMA overall (defined as individuals who moved to Beijing within the last five years) based on the 2000 Census (National Bureau, 2002) (Table 1). Figure 3 compares the age distribution of the surveyed migrants with that of Beijing's permanent population in 2007. Migrants are highly concentrated in the 20–39 age cohort, with a mean age of 34, compared to a mean age of 37.8 among Beijing's permanent population. The dominance

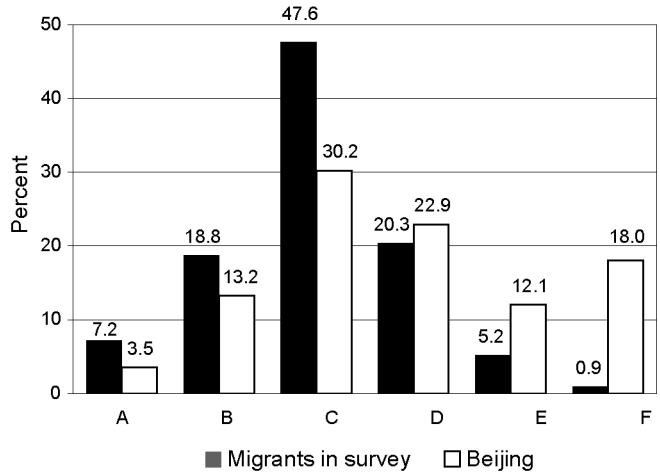


Fig. 4. Educational attainment of migrants and Beijing's permanent population. Level of educational attainment: A = no formal education; B = elementary school; C = junior high school; D = senior high school/technical school; E = college; F = university and above. *Sources*: Beijing Urban Village Survey; 2005 One-Percent Population Sample Survey in Beijing (Beijing Bureau, 2006).

of young males among migrants is consistent with the notion that their main purpose of staying in cities is to work.

Figure 4 compares the educational attainment of migrants in our survey with that of Beijing's permanent population. Among migrants, 73.1 percent have junior high school or lower levels of educational attainment, in comparison with 47.0 percent among Beijing's population. A low level of educational attainment is among the factors contributing to the migrants' low income and their concentrated employment in low-skilled sectors.

The mean monthly income of migrants in the survey is 1,984 yuan, compared to a mean income of 3,876 yuan for the labor force in Beijing as of 2007 (Beijing Bureau, 2008). As is evident from Figure 5, the income distribution of migrants peaks at around 2000 yuan before falling off at higher income levels.

Among the migrants in the survey, 72.6 percent work in the tertiary sector,[3] a slightly larger share than in Beijing's labor force as a whole (69.3 percent) (Beijing Bureau, 2008). Figure 6 shows that for every major occupational category migrants earn less than the average for Beijing's permanent labor force. Such an income discrepancy suggests that: (1) migrants concentrate in low-skilled jobs within each industry; and (2) they encounter discrimination in the labor market (Fan, 2001, 2002).

The vast majority—85 percent—of the migrants in our survey hold rural *hukou*. The rest have urban *hukou* from places other than Beijing, with the majority of being from small

[3]The tertiary sector as defined by Chinese statistical agencies includes the following activities: transport, storage, and postal services; information transmission, computer services, and software; wholesale and retail trade; hotel and restaurants; financial intermediation; real estate; leasing and business services; scientific research, technical services, and geologic prospecting; management of water resources, the environment, and public facilities; household and other services; education; health, social security, and social welfare; culture, sports, and entertainment; and public management and social organization.

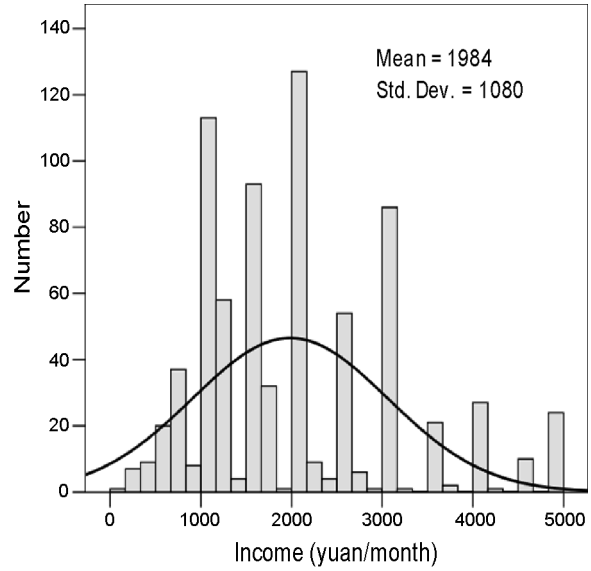


Fig. 5. Income distribution of migrants. *Source*: Beijing Urban Village Survey.

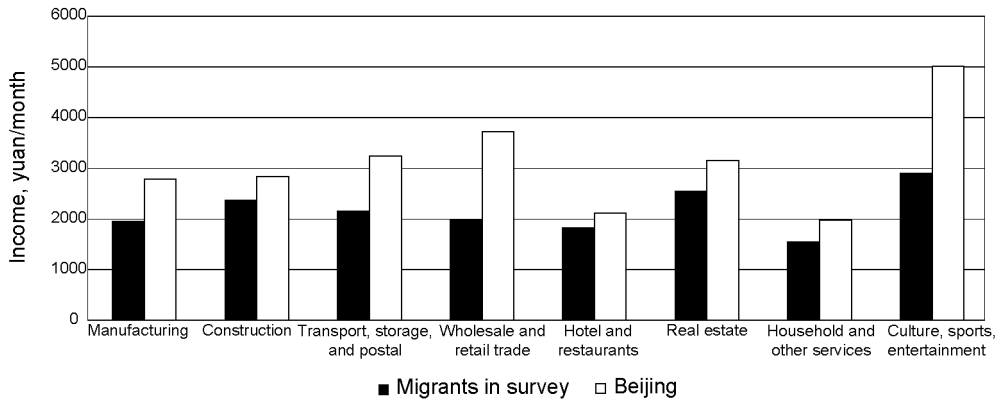


Fig. 6. Comparison of migrants' income with that of Beijing's permanent labor force. *Sources*: Beijing Urban Village Survey; Beijing Bureau (2008).

towns. The most popular provinces of origin are Henan, Hebei, Shandong, Anhui, and Sichuan, which together account for 63 percent of migrants in the survey. Except for their rank order, this top-five list is identical to the listing of top five origin provinces of migrants according to the 2000 Census (Table 2, Fig. 7). Figure 7A, based on the 2000 Census, shows the 14 largest interprovincial migration flows—i.e., streams of individuals moving to Beijing from another province over the past five years. Distance plays an important role, as provinces adjacent to Beijing, such as Hebei and Shandong, are among the major sources of migrant inflows. At the same time, non-adjacent provinces that are poor and have a long history of sending out migrants, such as Sichuan and Anhui, also are major origin provinces.

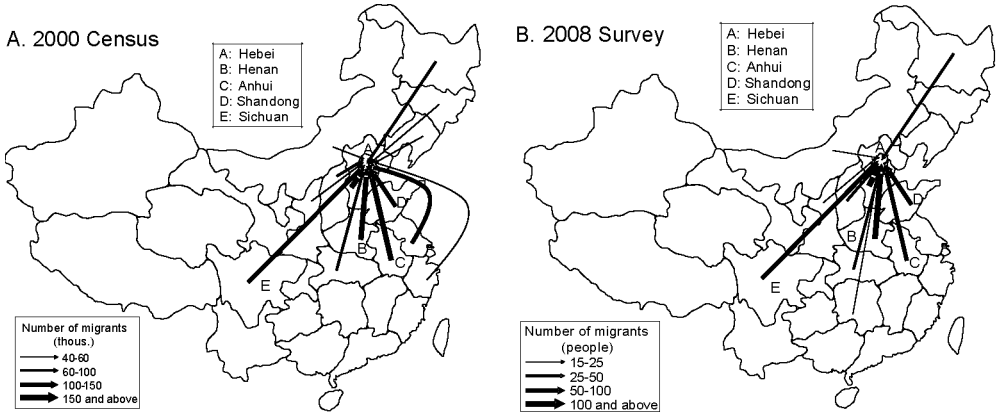


Fig. 7. Origins of migrants to Beijing. Sources: A. National Bureau (2002). B. Beijing Urban Village Survey.

Table 2. The Five Most Popular Origin Provinces of Migrants in Beijing, 2000–2008

2000 Census		2008 Urban Village Survey	
Rank and province	*N*	Rank and province	*N*
1. Hebei	373,810	1. Henan	160
2. Henan	233,370	2. Hebei	128
3. Anhui	150,390	3. Shandong	77
4. Shandong	145,870	4. Anhui	58
5. Sichuan	106,700	5. Sichuan	53

Sources: National Bureau, 2002 and Beijing Urban Village Survey.

In the survey, we asked migrants how long they intended to stay in Beijing. Among the respondents, 38.8 percent would like to remain permanently; 18.4 percent intend to stay for another one to four years; 25.8 percent are prepared to leave at any time; and 17.1 percent have "no idea" (see Fig. 8). These results suggest that the majority of migrant workers consider themselves as temporary, seeking primarily to earn money rather than to reside in Beijing permanently.

HOUSING IN URBAN VILLAGES

Urban villages in Chinese cities are well known for their poor physical environments and abundance of social problems. Our observations of the physical environment in the surveyed urban villages can be summarized as follows: houses are overcrowded; public stairways in built structures are very narrow; public facilities are inadequate and poorly maintained; distances between houses are small and well below fire-control standards; and garbage is scattered around (e.g., for three images from urban villages surveyed by our team, see Fig. 9). In short, the living conditions in urban villages are extremely poor, as reflected in the migrants' own perceptions. In our survey, 81 percent of migrants stated that they had personally observed crimes in their neighborhoods during the six months prior to the survey.

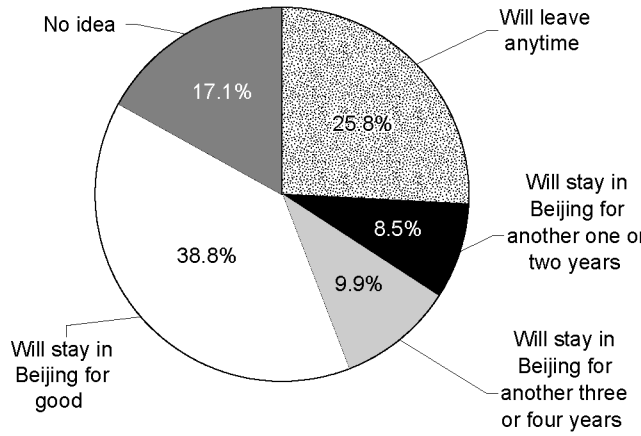


Fig. 8. Migrant workers' intention to remain in Beijing.

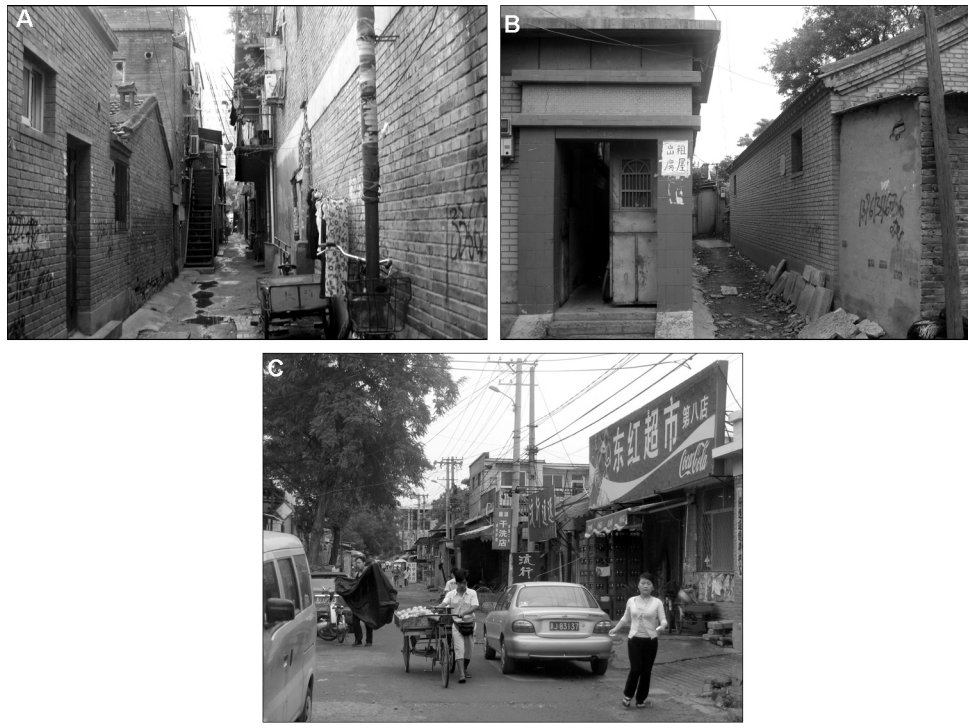
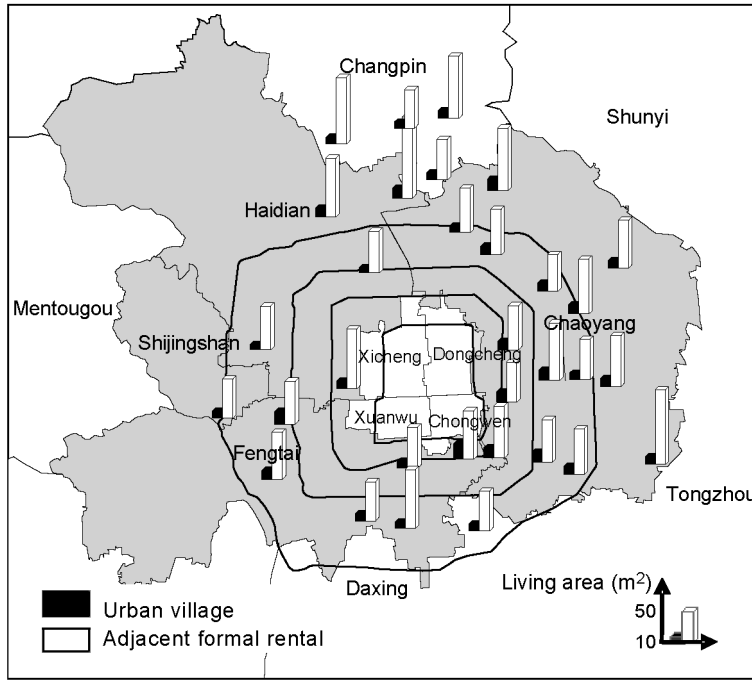


Fig. 9. Urban villages in Beijing. A. Narrow alleys and balconies on upper floors (to maximize living space) are commonly seen in urban villages. B. A flyer on rooms available for rent is posted at the entrance to a house. C. Urban villages of significant size may have their own supermarkets, laundry shops, vendors, and other stores. Some store owners are self-employed migrants.

High-density living is a hallmark of urban villages. Most of the housing units in the surveyed urban villages are one-room units, and the mean living space per dwelling room is



Unit size regressions:

(1) Urban village

Log(size) = 16.943 - **0.00004** (distance to the city center)

(6.207)*** (-0.193)

$R^2 = 0.000$

(2) Adjacent formal rental

Log (size) = 69.181 + **0.00175** (distance to the city center)

(7.045)*** (2.350)**

$R^2 = 0.136$

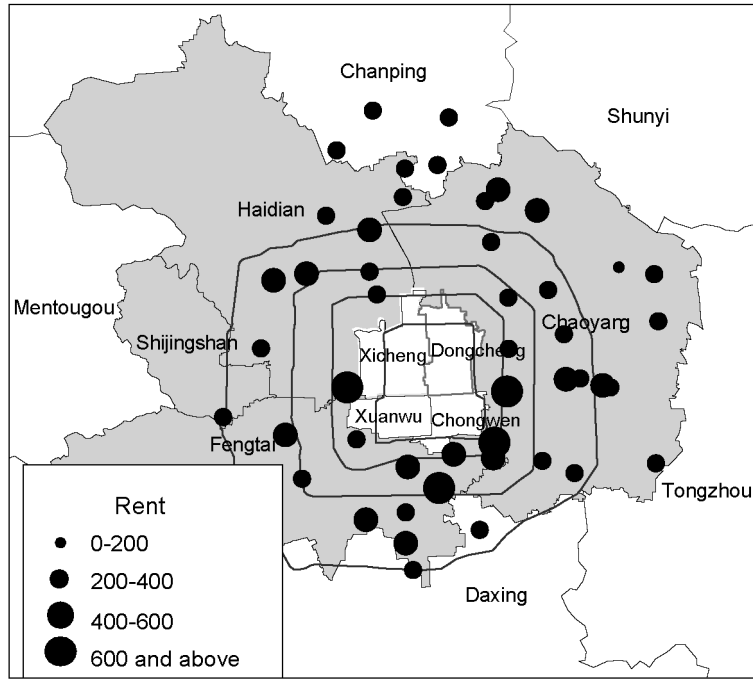
Fig. 10. Unit sizes of urban village housing and adjacent formal rental housing. *Sources*: Beijing Urban Village Survey and Wo Ai Wo Jia (2009).

Table 3. Facilities in Rental Units in Beijing Urban Villages in 2008 (percent)

Facility	Availability		Facility	Availability	
	Yes	No		Yes	No
Bathroom	4.2	95.8	Electricity	99.1	0.9
Kitchen	8.1	91.9	Television	77.6	22.4
Heating	14.0	86.0	Refrigerator	22.6	77.4
Air conditioning	6.7	93.3			

Source: Beijing Urban Village Survey.

13.2 m^2. The mean per capita living space is 8.2 m^2, less than one-third that (27.0 m^2) in Beijing's formal housing sector (houses built on state-owned land parcels) in 2007 (Beijing Bureau, 2008). To control for location, for each surveyed urban village, we computed the



Summary statistics (yuan per month)

Min	163.9
Max	795.7
Mean	384.1
Std. Dev	126.1

OLS regression:
Log(rent) = 6.483 - 0.0467 (distance to the city center)
(53.3***) (-5.1***)
$R^2 = 0.346$

Fig. 11. Per-unit monthly rent in urban villages. *Source*: Beijing Urban Village Survey.

average unit size of 10 adjacent formal rental housing units on the market. On average, the unit size ratio of urban village housing to formal rental housing is 1:6.32, confirming the large size gap between these two types of housing (Fig. 10). The two regressions in Figure 10 show that although the unit size gradient with respect to distance to the city center for the formal housing sector has a slightly positive gradient, which is consistent with urban theory, the gradient for urban villages is flat. This means that migrants' demand for unit size has no spatial variation—they consume the same amount of housing space everywhere.

Facilities in urban village units are inadequate and poorly maintained (Table 3). More than 90 percent of the surveyed units do not have bathrooms or kitchens. Dwellers of these units use public bathrooms and cook in public spaces. Despite the cold winters and summer heat in Beijing (daily minimums in January average 15.1°F and daily maximums in July 87.4°F), 86.0 percent of the units we surveyed have no heating and 93.3 percent no air-conditioning. Almost all of the surveyed units do have electricity, however, and in fact television is the most popular electrical appliance (though most are old sets)—77.6 percent—in the surveyed units; only 22.6 percent of the units have a refrigerator.

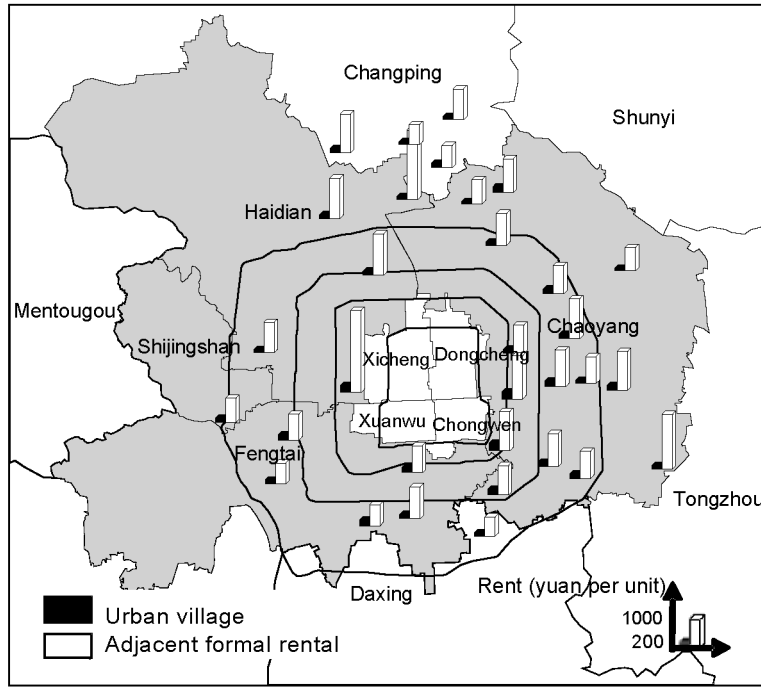
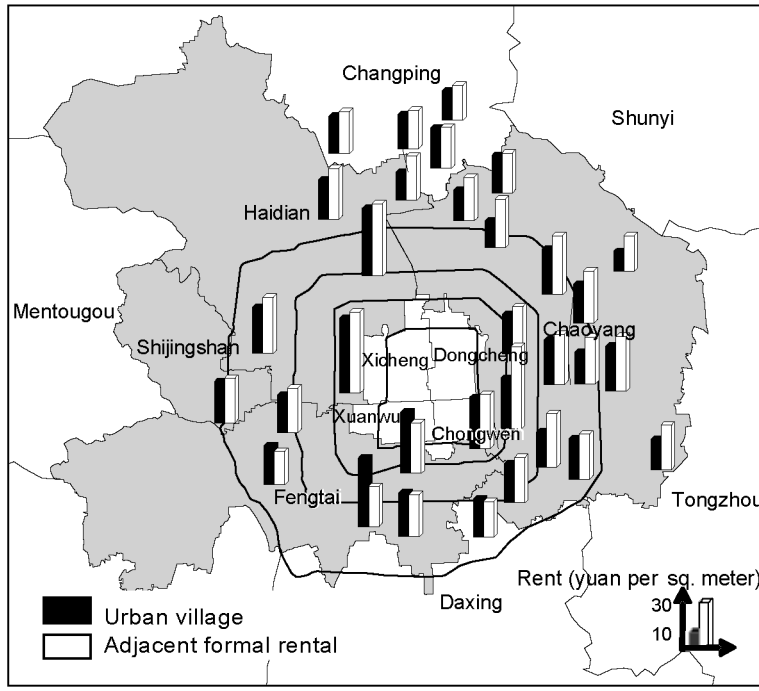


Fig. 12. Rent per dwelling unit for urban villages and adjacent formal rental units. *Source*: Beijing Urban Village Survey.

Despite the poor living conditions in urban villages, the low housing cost there has attracted large numbers of migrants. According to our survey, the average monthly rent per urban village unit is 384.1 yuan, compared to approximately 2,000 yuan per one-bedroom unit in the formal housing sector. Because urban village units are mostly one-room units without bathroom and kitchen, whereas units used for comparison in formal rental housing are primarily one-bedroom apartments with bathroom and kitchen, they are not exactly comparable. Nonetheless, it is not surprising that the much higher per-unit rent in the formal housing sector is too expensive for migrant workers.

Figure 11 and the regression associated with it examine the effect of distance to the city center on per-unit rent. Simple OLS regression indicates a significant negative rent gradient for urban village units: an additional kilometer of distance from the city center reduces per-unit rent paid by 4.7 percent. This parsimonious model explains 34.6 percent of the spatial variation in housing cost across urban villages.

We now further explore the roles of distance and unit size in determining rent. Figure 12 shows that everywhere in Beijing the per unit rent in urban villages is significantly lower than that in adjacent formal housing units. However, the gap in rent per square meter between the two types of housing is small (Fig. 13). On average, rent per square meter in adjacent formal rental housing is only 1.23 times that of urban village housing, with several urban villages showing rent per square meter equal to or even higher than that in adjacent formal rental housing. Thus, the two regressions associated with Figure 13 show that the (per



Per square meter rent regressions:

(1) Urban village

Log (rent/m^2) = 42.212 - **0.0012** (distance to the city center)

(13.710)*** (-5.103)***

R^2 = 0.348

(2) Adjacent formal rental

Log(rent/m^2) = 45.155 - **0.0011** (distance to the city center)

(13.814)*** (-4.291)***

R^2 = 0.326

Fig. 13. Rent per square meter for urban villages and adjacent formal rental units. *Source*: Beijing Urban Village Survey.

square meter) rent gradients for urban village and formal housing sectors with respect to distance to the city center are almost identical.

Comparing Figures 10–13 and their associated regressions, we can conclude that size difference is the key to explaining housing cost differentials between migrants and local residents. In other words, migrants are willing to pay per-unit-space rent that is similar to that in formal rental housing in similar locations, but their low income constrains their choices and reduces their space consumption. Urban villages that have small dwelling units have therefore become the destinations of choice for migrants. This finding has rather important policy implications. Knowing that migrants are willing to pay market or near-market per-unit-space rent, and that their size consumption is constrained by income, local governments can consider building affordable small-unit housing, in which facilities and

amenities also are available; such housing units would provide an alternative to urban villages for migrant housing.

MIGRANTS' INCOME AND HOUSING

Modeling Wage and Housing Demand

It is well documented that housing consumption is a function of income. Standard housing affordability studies have established 30 percent as the threshold of the income share spent on housing (Bogdon and Can, 1997). In our survey described above, the income of migrant workers in urban villages is approximately one-half (51.2 percent) that of local workers in Beijing, but the former's housing consumption (in terms of housing cost) is less than 20 percent of their adjacent local residents. The share of housing cost in migrants' income is only 19.5 percent. In other words, not only can migrant workers in urban villages afford their current rent, they can even afford a higher rent—i.e., more expensive and/or larger dwellings. The question thus arises as to why more migrants do not move into the formal housing sector, which affords larger unit sizes as well as a more desirable living environment. To better understand the underlying driving forces for migrants' housing (neighborhood) choices, we explore the determinants of migrant workers' wages and housing demand. In so doing, we follow the standard labor economics literature to predict a worker's expected earnings according to his/her human capital and demographics. The Mincerian wage equation, augmented with industry fixed effects, is:

$$\log(WAGE_i) = a_0 + a_1 \cdot AGE_i + a_2 \cdot AGE_i^2 + a_3 \cdot GENDER_i + a_4 \cdot EDU_i + a_5 \cdot BJYEAR + \boldsymbol{\beta} \times \mathbf{industry\_dummies}_i + \varepsilon_i, \quad (1)$$

where *WAGE* is migrant worker *i*'s monthly wage. We include the level and quadratic terms of the worker's age (AGE, AGE^2) to examine the nonlinear effect of age on wage. *EDU* refers to the worker's educational attainment, measured by years of schooling. *BJYEAR* is the time length (in years) the migrant worker has stayed in Beijing. Migrant workers accumulate work experience and build social connections, which may bring in additional earnings. Therefore, we expect that the wage will rise with increasing duration of stay. For industries, we include nine categories—we selected wholesale and retail industry as the reference group and defined the other eight industries as dummy variables. Table A2 in the Appendix provides the descriptions and summary statistics for these variables.

Our housing demand equation is derived from household utility maximization under a budget constraint, which considers housing demand as a function of household income, the household's preference for housing, the cost of housing service, and the cost of other consumption goods. Housing demand is measured by total housing expenditure (Muth, 1960; Megbolugbe et al., 1991). For migrants in this study, housing expenditure is equivalent to rent. The measure of income is dependent on housing tenure. For homeowners, household income is best represented by permanent income because housing is a durable good and the decision to purchase a home is based on the household's expected earnings when there is no credit constraint (Polinsky and Ellwood, 1979). In our study, all migrant workers in urban villages are renters and are extremely credit-constrained, because they are not eligible for mortgage loans from banks. Therefore, we use current income instead of permanent income in the housing demand equation.

Demographic characteristics are often included in the housing demand equation to reflect preference. In our study, we use age and household size as control variables for housing preferences. When all observations are from the same city (or the same housing submarket), costs for housing service and other consumption goods are constant for the entire sample and are therefore not necessary for the model (Polinsky and Ellwood, 1979). For this reason, we do not include these housing service costs in the equation.

In addition to income, age, and household size, we also include the migrant worker's expectation for his/her future stay in Beijing. Our rationale is that if migrant workers consider themselves as temporary workers with the sole purpose of earning money before leaving in the future, they will save as much money as possible and will not be motivated to consume, including housing consumption, in the city. Conversely, if migrants intend to stay, they may then be motivated to increase their housing consumption. Our survey includes a question on migrants' intention to stay (see Fig. 8). In summary, our housing demand equation (see Table A2) is:

$$\log(RENT_i) = \gamma_0 + \gamma_1 \cdot HINC_i + \gamma_2 \cdot AGE_i + \gamma_3 \cdot HSIZE_i + \gamma_4 \cdot STAY + \delta_i, \quad (2)$$

where *RENT* is migrant household *i*'s monthly rent expenditure, *HINC* is household monthly income, *HSIZE* is household size, and *STAY* is the migrant worker's intention to stay in Beijing. The larger the value of *STAY*, the stronger the household's intention to stay in Beijing in the future. We expect that this variable has a positive effect on housing consumption.

Empirical Results for the Wage Equation

Table 4 summarizes two regressions that estimate equation (1), which explain 22 to 25 percent of the variation in migrant workers' wage. Estimation (1) includes the demographic variables, education measure, and industry dummies. *EDU* shows that the return rate to education is 3.1 percent—i.e., a one-year increase in schooling contributes to a 3 percent wage increase. This is a much smaller rate than that of the overall labor force in Chinese cities, whose return to education is about 7 percent (Zheng et al., 2009). This gap in the economic return from education signals the persistence of labor market discrimination toward migrant workers (Zhang and Meng, 2007).

Age has an inverted-U effect on wage, peaking at about 30 years. The initial positive effect of increasing age on wage reflects the accumulation of experience and skills with increasing age. However, this effect is not linear and declines with increasing age, suggesting that for migrant work that requires only low skills, physical ability is more often a determining factor of wage level than experience. The wage of male migrant workers is 27 percent higher than that of their female counterparts—a factor explaining why there are more men than women living in urban villages (Table 1). Regarding industry dummies, we find that migrant workers in hotel/restaurant and service industries have the lowest earnings, whereas those in culture industry command the highest wage. A detailed examination of our questionnaire responses reveals that migrant workers in the service industry are overwhelmingly engaged in housekeeping jobs, which have low skill requirements.

In estimation (2), we include migrants' duration of stay in Beijing (*BJYEAR*) in order to examine their "learning curve" in cities. The learning effect is significant at the 1 percent level; a one-year increase in the duration of stay can increase the wage by 1.7 percent. This shows that migrant workers' experience, working skills, and social connections in the city

Table 4. Regression Results for the Wage Equation[a]

Variable	Log(*WAGE*) (1) Coeff. (t-stat.)	Log(*WAGE*) (2) Coeff. (t-stat.)
AGE	0.063 (5.4)***	0.046 (3.9)***
AGE^2	-0.001 (6.2)***	-0.001 (4.9)***
GENDER	0.266 (6.2)***	0.250 (5.8)***
EDU	0.031 (4.8)***	0.031 (4.9)***
BJYEAR		0.017 (4.5)***
Industry dummies:		
MANUFACTURING	-0.109 (1.5)	-0.098 (1.4)
CONSTRUCTION	0.089 (1.5)	0.063 (1.0)
TRANSPORT	0.012 (0.2)	0.016 (0.2)
HOTEL_RESTRT	-0.132 (2.1)**	-0.135 (2.2)**
REALESTATE	0.159 (0.7)	0.164 (0.8)
SERVICE	-0.240 (4.2)***	-0.236 (4.1)***
CULTURE	0.242 (1.7)*	0.184 (1.3)
OTHER_IND	-0.101 (0.9)	-0.081 (0.7)
constant	6.091 (28.0)***	6.311 (28.6)***
Observations	752	748
R^2	0.224	0.246

[a]The number of observations is not equal to the survey sample size due to missing values for *WAGE* and *BJYEAR*; ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels, respectively.

can accumulate as their length of stay increases. This learning effect is about half the effect of formal education.

Empirical Results for the Housing Demand Equation

Table 5 summarizes the two regressions that estimate Equation (2). Estimation (1) includes household income (in logarithmic scale), age, and household size. Generally, housing demand increases with both household income and household size. Adding one more member to a household increases housing demand by about 17.4 percent. *AGE* does not have a significant effect on housing demand.[4] The income elasticity of housing demand—the coefficient of Log(*HINC*)—is 0.129, indicating that a 10 percent increase in household income will result in a 1.29 percent increase in housing demand. This elasticity is much lower than the income elasticity of 0.499 for the renters in Chinese cities as a whole (Zheng, 2007). The low income elasticity of housing demand for migrant workers reflects their weak motivation to spend (especially on housing) in cities, supporting our observation made earlier.

In Estimation (2), we add *STAY* (intention to stay in Beijing) in order to examine whether migrant workers who plan to stay in Beijing for many years are more likely to rent larger or

[4]We also tried AGE^2, but found that it also was not significant.

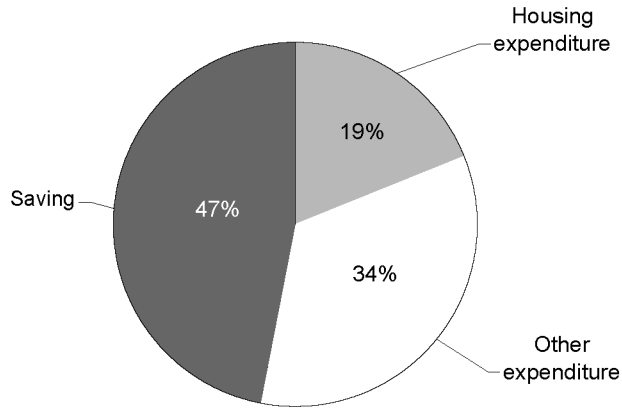


Fig. 14. Usage of migrant workers' household income.

Table 5. Regression Results for the Housing Demand Equation[a]

Variable	Log(*RENT*) (1)	Log(*RENT*) (2)
	Coeff. (t-stat.)	Coeff. (t-stat.)
Log(*FINC*)	0.129 (3.7)***	0.086 (2.2)**
AGE	-0.001 (0.7)	-0.002 (0.9)
HSIZE	0.174 (10.8)***	0.180 (10.4)***
STAY		0.041 (2.6)***
Constant	4.562 (16.0)***	4.784 (15.2)***
Observations	697	586
R^2	0.178	0.186

[a]The number of observations is not equal to the survey sample size due to missing values for *WAGE* and *BJYEAR*.
***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels, respectively.

better homes. This variable has a positive and significant coefficient (at the 1 percent level), further confirming the relationship between intention to stay and the consumption of housing.

Figure 14 summaries how migrant workers' household income is used. As noted previously, housing expenditure accounts for only 19.5 percent of migrant's household income. The ratio of total expenditure to income is only 53 percent for migrants, compared to 72.5 percent for urban residents (National Bureau, 2008). As discussed earlier, from the housing affordability perspective these migrants can not only afford their current rental units in urban villages but actually can afford even better housing. Nonetheless, migrant workers do not choose to improve their housing consumption. Instead, they save almost half of their earnings, which are customarily sent back as remittances to their rural homes (Fig. 14). The above therefore suggests that migrant workers live in crowded and cheap urban village houses not because they cannot afford better housing accommodation, but because they are not willing to spend their hard-earned income in cities.

Migrant workers' reluctance to improve their housing consumption in cities clearly implies that to them the city is only a place for work and not a permanent residence. A major reason for this observation is the institutional barriers migrants face in cities. Despite relaxations of mobility constraints that since the 1980s have made possible increases in rural labor migration, it is still extremely difficult for rural Chinese to obtain urban *hukou* (Chan, 2009). The bundle of urban social services (such as public housing, health insurance, unemployment insurance, pension fund, housing provident fund, etc.) is closely tied to the *hukou* system. The vast majority of migrant workers in cities are seen and considered as temporary workers and thus do not have access to these social services and many urban amenities (Fan, 2001, 2002). Rather than seeing cities as their homes, migrants circulate between urban work and the countryside, and it is the home village and community that constitutes their long-term social and economic security (Fan, 2008; Fan and Wang, 2008). It is not surprising, therefore, that migrant workers are cautious about plans to stay and consume in the city (Zhu, 2007; Zhu and Chen, 2009).

SUMMARY AND CONCLUSION

Urban villages epitomize not only the landscapes but also the complex processes of rural-urban migration in China. Many rural villages situated on the fringes of cities have been encroached upon by urban expansion and are inhabited by large numbers of migrant workers. Using a recent survey of 50 such urban villages in Beijing, we have documented in this paper the living and work conditions of migrant workers and analyzed their housing consumption behavior.

Our survey reveals demographic and social characteristics of migrant workers that are similar to those described in existing studies. The majority of migrants living in urban villages are male and young. Most have low levels of educational attainment and hold low-skill jobs in the tertiary sector. Their average wage is roughly half of that of the local labor force. In addition to demographic and social characteristics, our study has yielded fresh and detailed information about the living conditions of migrant workers. Their housing conditions are poor: rental units in urban villages are overcrowded, facilities are inadequate and poorly maintained, and social problems are rampant. Migrant workers' housing consumption behavior is marked by, first, a willingness to pay per-unit-space rent at or near market levels as reflected in adjacent formal rental units, and second, small space consumption and accordingly low overall expenditure on rent. And, unlike formal rental units that increase in size with increasing distance from the city center, dwelling units of migrants in urban villages are of similar size across the city. In other words, migrants are attracted to urban villages not because the dwelling units there have lower-than-market rent but because they are small.

An obvious reason for migrants' small size consumption is their low income. To ascertain that relationship, we have investigated the determinants of migrant workers' wage and housing demand by estimating the Mincerian wage equation and a housing demand equation. The wage equation reveals a small return on schooling for migrant workers, signaling persistent discrimination in the urban labor market. We have found a significant learning curve for rural migrants, suggesting that cities with agglomeration economies will provide learning benefits for migrants who have remained there for a long period of time. This learning benefit is likely to sustain continued rural-urban migration in the future.

Our housing demand equation shows that the income elasticity of housing demand for migrants is much lower than that of local residents in cities. On average, migrants spend only 19 percent of their income on housing and save about half of their income. We have also

found that only those who plan to stay in Beijing in the future are willing to rent larger or better homes.

The above findings suggest that migrant workers choose urban village housing that is small, overcrowded, and poorly served not because they cannot afford better housing but because they are not willing to consume in the city. Due to barriers to urban *hukou* and associated benefits, labor market discrimination, and social segregation and inferiority, most migrant workers consider the city as merely a place to work but not to live. As a result, they are motivated to circulate between sites of migrant work and their home villages, and to save their income or expend it on rural households in their home villages rather than on consumption in the city.

From a theoretical perspective, our findings highlight the stickiness of rural-urban migration. Rather than a one-way flow from the countryside to the city, rural-urban migration in China is marked by long-term circulatory movements, barriers to permanent urban settlement, and migrants' difficulties and reluctance to "become urban" other than working for a wage in the city. From a policy perspective, our study shows that migrants are willing to pay market rent as long as the dwelling unit is small and thus the total housing expenditure also is small. Local governments can consider building affordable small-unit housing, where facilities and amenities are available, as an alternative to urban villages for migrant housing. Policies that improve the job and social security of migrant workers would increase migrant workers' willingness to spend more on housing, which would in turn improve their living conditions.

The current global financial crisis has resulted in millions of migrant workers losing their jobs. Many have returned to their original villages to farm, but others insist on looking for migrant work. These recent events reinforce the notion that for migrant workers the city is merely a place to work but not to live. When the job opportunities are gone, migrants have few options other than to leave the city. In order for these workers to stay and spend (for example, on housing) in cities, policies that enable them to accumulate human capital, take high-skill jobs, and increase social integration are necessary.

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APPENDIX

Table A1. The 50 Surveyed Urban Villages

Village	Natives	Migrants	Migrant/ native ratio	Village	Natives	Migrants	Migrant/ native ratio
Bajia	1,700	45,000	26.5	Cuigezhuang	1,683	35,000	20.8
Magezhuang	3,000	50,000	16.7	Leijiaqiao	1,087	10,000	9.2
Beishuang qiao	405	1,310	3.2	Jiugong	323	3,500	10.8
Zhongtan	1,500	20,000	13.3	Shoubaozhuang	800	7,800	9.8
Dongxiaokou	1,730	15,000	8.7	Majiapu	2,788	780	0.3
Maliandian	1,650	14,000	8.5	Dahongmen	5,500	6,000	1.1
Yamenkou West	2,528	3,397	1.3	Yushuzhuang	2,300	1,000	0.4
Beimafang	2,040	3,000	1.5	Dajing	15,000	7,000	0.5
Caogezhuang	1,100	3,500	3.2	Sanluju	400	1,000	2.5
Mafang	4,500	50,000	11.1	Beihuqu	320	1,200	3.8
Dongsanqi	1,860	27,000	14.5	Changpo	1,125	900	0.8
Huilongguan	3,300	28,000	8.5	Xiaowuji	3,800	20,000	5.3
Wangsiying	1,037	12,000	11.6	Beihuayuan	2,500	2,000	0.8
Kuifang	4,500	10,000	2.2	Tuofangying	6,100	8,000	1.3
Liulangzhuang	3,000	20,000	6.7	Xizhihe	3,000	3,000	1.0
Shucun	6,600	50,000	7.6	Gaojing	3,480	16,138	4.6
Niuwangmiao	1,000	3,000	3.0	Sum	91,656	478,525	5.2

Villages for which migrant and native numbers are not available

Fenzhongsi	Tiancun
Gaomiao	Wanjuzhuang
Heizhuanghu	Wudaokou
Huangtingzi	Xinfadi
Kandanqiao	Xinsheng
Liujiayao	Yaojiayuan
Nanyuan	Yujiafen
Shiliheng	Yuquan
Tishi West	

Table A2. Variable Definitions and Summary Statistics

Variable	Description of migrant worker	Mean	Standard deviation
WAGE	Monthly wage (yuan)	1984.4	1079.5
HINC	Monthly household income (yuan)	2715.2	1493.5
AGE	Age (years)	33.9	9.9
GENDER	Binary, gender, 1 = male	0.669	0.471
EDU	Length of schooling (years)	8.7	3.2
HSIZE	Household size (people)	2.3	1.2
BJYEAR	Length of stay in Beijing (years)	7.1	5.5
MANUFACTURING	Binary, 1 = employed in manufacturing.	0.090	0.286
CONSTRUCTION	Binary, 1 = employed in construction	0.148	0.355
TRANSPORT	Binary, 1 = employed in transport, storage, and postal	0.075	0.264
SALE	Binary, 1 = employed in wholesale and retail trade	0.339	0.474
HOTEL_RESTRT	Binary, 1 = employed in hotel and restaurants	0.127	0.333
REALESTATE	Binary, 1 = employed in real estate	0.008	0.089
SERVICE	Binary, 1 = employed in household and other services	0.157	0.364
CULTURE	Binary, 1 = employed in culture, sports, and entertainment	0.020	0.140
OTHER_IND	Binary, 1 = employed in other than above eight industries	0.032	0.175
STAY	Intention to stay in Beijing: 1 = will leave any time; 2 = will remain in Beijing for another one or two years; 3 = will remain in Beijing for another three or four years; 4 = will remain in Beijing permanently; NULL = no idea.	2.7	1.3
CONSUMPTION	Household consumption expenditure (yuan)	1405.1	987.3
RENT	Monthly rent (including expenditure on facilities)	444.6	373.0