Housing Windfalls and Intergenerational Transfers in China

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Abstract

In this paper, we study the impact of housing reform and the rapid development of the housing market in China on intergenerational transfers and elderly well-being. Between 1995 and 1998, the Chinese government gave property rights to many urban residents who had been allocated housing by their *danwei* employers. These unexpected windfalls were substantial in size, and grew with the rapid increase in housing prices over time, significantly impacting the asset holdings and wealth of affected urban residents. We examine the effect of these exogenous changes in wealth on inter-vivos transfers and intergenerational transfer motives.

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I. Introduction

The focus of the economics literature on intergenerational transfers has been on how changes in recipient income impact transfers. If transfers rise with recipient income, this is seen as evidence of an exchange motive. If transfers rise when recipient income falls, this is seen as evidence of altruism (Cox 1987). Often, these transfers and income changes are contemporaneous and temporary. In this paper, we examine how a permanent change in one's wealth influences transfers received from non-resident adult children.

We identify the effect of a permanent wealth increase on intergenerational transfers by instrumenting household wealth with the market windfall many employees of work units received when they purchased housing from their employers. In urban China, housing reform resulted in rapid appreciation of undersupplied housing in the private sector. Prior to the housing reform, *danwei* employers allotted housing to their employees. During the period of housing reform, since this housing was allocated before a housing market existed, significant random variation resulted in the size of housing windfalls associated with the market value later placed on specific locations. In this paper, we use this variation in housing market values to identify the impact of an exogenous increase in household wealth on intergenerational transfers.

Those who purchased subsidized housing from their work units received significant windfalls, resulting in an increase in household wealth and permanent income. If transfers from children to parents are motivated by altruism, we would expect children to reduce the amount transferred to their parents.

On the other hand, if children increase the amount they transfer to parents when parents receive this housing windfall, then their transfer motives are more likely to be strategic rather than altruistic. Children may provide more to their parents in the hopes that parents will bequest

their housing to them, or in exchange for living with them in better housing than they could afford at market rates. While children generally earn more than their parents, the housing windfall may also shift bargaining power within the family from adult children to elderly parents. They may be able to extract more time and care from their children as a result of this increased bargaining power.

In addition, wealth or asset holdings may be a better measure of elderly wellbeing than wage income, particularly in this context. In developing countries, income is hard to measure. Usually, expenditure proxies for income. In China, retired elderly receive little income. Some might receive pensions, but amounts are usually low. So they primarily rely on their wealth. In addition, wealth may reflect the occurrence of negative life events. For example, in the U.S., death and divorce slow down asset accumulation. Often assets are actually drawn down during such events. In the U.S., the evolution of assets is also very strongly related to health (Poterba, Venti, and Wise 2010). In urban China, the ability to draw down assets in times of need would be more difficult, since housing comprises nearly 80% of household wealth on average, and is an illiquid asset. Children might help their parents when they are in need so that they do not sell housing that would appreciate in value, allowing them to inherit this valuable asset or make use of it by living with parents.

Secondi (1997) finds that in China, child care services may be one of the main services the elderly provide their adult children in exchange for money, and that altruism alone cannot explain transfers from children to elderly parents. In addition, Li, Rosenzweig and Zhang (2010) use twin data in China to exploit a "natural experiment" resulting from parents having been forced to send away one of their children for rustification during the Cultural Revolution, and use this experimental variation in parental time with children to identify its effect on transfers to

children later in life, and whether transfers are motivated by altruism or guilt. The authors find that while transfers are motivated by altruism, guilt also plays an important role, as children who had been sent away for a longer period of time receive more transfers from parents, even when they have higher earnings.

While much of the recent empirical literature has pointed towards evidence of exchange motives, a number of studies have also found some evidence of altruism and risk-sharing using non-linear models. For example, Cox, Jansen and Jimenez (2004) use a conditional least squares model to estimate the threshold pre-transfer income level at which point transfer motives switch from altruistic or risk-sharing motives to exchange motives. In China, Cai, Giles, and Meng (2006) find that children in China provide transfers to parents with low household incomes when income falls below the poverty line, which is consistent with an altruistic motive; although such transfers are not sufficient to fully compensate for negative income shocks to the elderly. The authors employ a semi-parametric partial linear model to estimate the relationship between net transfers and pre-transfer income without imposing any structure on the functional form (Yatchew 1998, 2003). We also adopt this method here to examine whether there is a non-linear relationship between housing wealth and transfers.

In this paper, we will examine whether parents who experience a significant wealth increase receive fewer inter-vivos transfers from their children. The unique policy instrument used here provides for an excellent opportunity to further test whether transfers between parents and children are motivated by altruism or strategic behavior.

We begin with a summary of the housing reform policies that began in 1979 and largely ended in 1999. In Section 3, we describe the data and empirical analysis. Section 4 follows with

a discussion of the empirical results. In Section 5, we conclude and discuss plans for future work in this area.

II. Housing Reform in China

Initial housing sales gave owners the right to use their property and pass it on through inheritance, but not the right to sell. Initial experiments began between 1979 and 1981, with the sale of new housing to urban residents at construction costs. In the early 1980s, all housing was purchased from work units.

In Gansu, this was true until the 1990s, and a private market for housing did not seem to really develop until 1998 (see Figure 1b). However, throughout much of the country, from 1982 to 1985, there were experiments with subsidized sales of new housing. The buyer paid one-third of the cost, while the remainder was subsidized equally by the employer and the city government. Such costs included the cost of land acquisition as well as the provision of local public facilities.

Experiments with comprehensive housing reform began between 1986 and 1988. At this time, public sector rents were raised; a housing subsidy for all public sector employees was introduced; and sales of public sector housing were promoted. In November 1991, a conference resolution "On Comprehensive Reform of the Urban Housing System," resulted in large scale sale of public housing at very low prices, particularly to current occupiers. But in 1993, the government suspended this housing reform because of concern about very low prices of sales.

In 1994, a significant wave of housing reforms was put into place as a result of "The Decision on Deepening the Urban Housing Reform." Under this system, employers and employees contributed to house savings funds. Rents were increased, especially for new tenants. However, low-income households received lower rents for old or unsellable public housing.

Three price mechanisms were put into place for public housing sales: (1) high-income families paid market prices and received full property rights, including the right to resell on the open market; (2) low- and middle-income families paid below market prices, which covered all costs, including land acquisition, construction, and local public facilities; (3) for those who could not afford these costs, a transitional pricing scheme was offered, taking into account both cost and affordability. The latter two types of subsidized purchases only gave home-owners use rights. In order to resell, the owner would have to repay the housing subsidy that had been originally provided. During this time, few cities had any secondary housing market.

In July 1998, a new policy was developed in order to stop the material distribution of public housing to employees and to introduce a cash subsidy for housing issued by public sector employers. Specific policies varied across regions and details were determined by local bodies. In general however, affordable housing was built with government support for low- and middle-income families, which constituted 70-80 percent of urban residents). High-income families (10-15 percent urban residents) purchased higher quality housing in the market. Poor families were given subsidized rental housing by their employers or the city government. But local authorities and state enterprises often had insufficient resources to pay such subsidies.[2]

In both Gansu and Zhejiang, we can see the major housing reform policies in 1991 and 1996, when the number of housing purchases increased considerably from previous years (see Figures 1a and 1b). Work unit housing purchases began to decline in 1999 when housing reform policies were for the most part coming to an end. While there was virtually no private housing market in Gansu until 1998, in Zhejiang, the number of houses purchased in the private market seems to be closely related to housing reforms. For example, market-bought housing purchases peaked in 1991, one year before work unit purchases peaked during the first major wave of

[2] For additional details on the history of housing reform policies in China, please see Wang and Murie (2000).

reforms. Market-bought housing also declined when work-unit housing purchases peaked. In addition, the number of housing purchases in the private market rose significantly in 1998, two years after the peak in work-unit purchases in 1996, during the second wave of major reforms. These fluctuations suggest that as work-unit housing became increasingly available for purchase, the private market for housing developed rapidly in response.

[Figures 1a and 1b here]

By 1999, few houses could be purchased from employers. Private housing markets began to dominate the scene, with rapidly rising prices because of insufficient supply. Shing-Yi Wang (2010) examines the equilibrium price effects of the privatization of housing assets that were allocated by the state. Findings suggest that the removal of price distortions raised housing demand and equilibrium prices. Using variation in the timing of housing reform across cities, Iyer, Meng, and Qian (2010) find that housing reform increases the proportion of households living in private housing and lowers the proportion in public rental housing. Wang and Murie (2000) and Wang (2000) examine differences across different social groups and land-use zones (central vs. peripheral), focusing on Beijing.

In Figures 2a and 2b, we can see the rapid response of the market to the availability of work-unit housing on the private market, as the 2008 market value of housing purchased from work units increased considerably. In Zhejiang, the market value of housing purchased from work units during the two major reform periods in 1992 and 1996 was relatively high. Gansu being a much poorer province, has seen lower housing windfalls. But all of the windfalls in Gansu have come from work-unit purchases. In Zheijiang, the average current market value of housing purchased from the market increased substantially in 1996. This may have to do with the resale of housing obtained during the earlier period of housing reform in the early 1990s. These

differences in market values also reflect the fact that the quality of housing purchased from work unit was considerably higher than privately owned housing.

[Figures 2a and 2b here]

The degree to which households gained from the housing reform of the 1990s can also be seen vividly when the 2008 market values are compared to the average prices for housing at the time of purchase. In Figures 3a, we can see that work-unit purchases in Zhejiang were sold at considerably lower prices than housing sold in the private market. In the early 1990s, prices were extremely low and close to zero. In the second wave of housing form beginning in 1996, prices for work-unit housing rose. This may reflect differences in the quality of housing made available, or in the fact that by 1993, the Chinese government became concerned about the extremely low prices at which *danwei* housing had been sold. Nonetheless, the purchase price for work-unit bought housing was around half the price of market-bought housing. In addition, market prices for housing rose considerably after the second wave of housing reforms in the mid to late 1990s. In comparison, in Gansu where most houses purchased were purchased from work units, there was not much change in purchase prices (see Figure 3b). Both work unit and market prices remained extremely low. In comparing these figures with Figures 2a and 2b, it is clear that households have benefited considerably from a rise in housing prices in recent years. In Zhejiang, a private market for housing seems to have developed as a result. This is an important point, since it indicates that housing assets were not completely illiquid assets. While in more developed countries, housing assets tend to be relatively illiquid, it seems there were considerable gains to selling a home that had been purchased from one's work unit and may have been located in a choice location of the city. The primary constraint in selling one's home may be due to a lack of affordable housing to find in its place. Further research is needed to

understand the extent to which such constraints have played a role. In terms of our analysis, such constraints would underestimate our results, since we may overestimating windfall gains to household wealth.

[Figures 3a and 3b here]

III. Data and Empirical Analysis

CHARLS Survey Data

We use data from a pilot study for the China Health and Retirement Longitudinal Survey (CHARLS), which was conducted in 2008. Surveyed households were restricted to those with members ages 45 and above. Much of the questionnaire was based on survey questions from the Health and Retirement Study in the U.S. (HRS), the English Longitudinal Study of Ageing (ELSA), and the Survey of Health, Ageing, and Retirement in Europe (SHARE). Two provinces were chosen for the pilot study. Zhejiang is a relatively wealthy and highly urbanized coastal province. In contrast, Gansu is the poorest province in China. It is located in the interior of the country, and is populated by many non-Han minorities. In the two provinces, 48 communities or villages were surveyed, belonging to 16 counties or districts. The overall sample is comprised of 2,685 individuals living in 1,570 households.

In this study, since only urban residents were affected by the housing reform, we restrict our sample to those households in which the respondent or spouse holds an urban *hukou* and the household members reside in an urban area. An urban area is defined as an area with a designated community office rather than a village office. Housing reforms were largely implemented by community offices, since work units or *danwei* employers were located in these areas. The sample is further restricted to non-resident adult children (age 16 and above). Summary statistics for all variables included in the analysis below are presented in Table 1. Means and standard errors were estimated using household sampling weights.

[Table 1 here]

Respondents were asked specifically about their housing assets and how they were impacted by housing reform policies. The main respondent was asked detailed questions regarding purchase of the house of residence. In addition, the main respondent and spouse were asked about any housing they had purchased from a work unit. Questions include: who purchased the house, who owns the house, year of purchase, purchase price, market price at time of purchase, and current market price. All nominal values were deflated by the urban consumer price index (CPI) provided by the China National Bureau of Statistics in annual Statistical Yearbooks, and are reported in 1978 RMB values.

In addition to questions regarding housing, respondents and spouses were asked detailed questions regarding the value of household assets such as: a car, bike, refrigerator, washing machine, TV, computer, and mobile phone. They were also asked about household and individually-held financial assets such as cash, savings, stocks, and funds. In order to compute a measure of household wealth, we sum up all of these assets and deduct the household's outstanding and unpaid loans, both formal and informal ones.

Finally, in addition to these financial questions, respondents were asked a number of detailed questions about financial transfers. The first question in this section of the survey was quite detailed, in order to remind the respondent of all of the different possible sources of help they may have received or provided to others in the past year: “Did you or your spouse receive more than 100 Yuan in financial help last year from any others? By financial help we mean giving money; helping pay bills; covering specific costs, such as those for medical care or insurance, schooling, and down payment for a home or rent; and providing non-monetary goods.” The respondent was then asked: “What kind of help did you receive: regular or non-

regular allowance? What is the total value of regular financial help you received? How much non-regular financial help, such as an allowance, a living stipend, or money for school expenses, did you receive in the past year?" Respondents also noted any transfers received during special occasions such as festivals, holidays, birthdays, or marriages. The focus of our analysis will be on all of these received transfers combined, net of transfers provided to adult non-resident children. Results will also be compared to gross transfers received.

Linear Regression Analysis

We are interested in measuring the extent to which the value of housing assets influences transfers received from adult children. To begin with, we estimate the following OLS regression:

$$\text{Transfers}_{ij} = b_0 + b_1(\text{Housing Wealth})_i + b_2X_{ij} + b_3X_i + \mu_c + \varepsilon_{ij} \qquad (1)$$

where X_{ij} are child level controls, X_i are characteristics of the main respondent and spouse, and μ_c are community fixed effects. Child characteristics include: age, gender, highest education level attained, whether the child is currently working, dummy variables for the number of adult non-resident brothers and sisters, and whether the child lives in the same community or neighborhood as the parent. Characteristics of the main respondent include: non-housing assets, per capita household income, marital status, number of non-adult children, household size, age of household head,[3] age of household head squared, whether the household head was employed in the public sector, dummies for the highest education level of the household head, and dummies for five year intervals of the year of the first housing purchase interacted with whether a housing purchase was made. Standard errors are clustered by household (or main respondent and spouse).

Estimates of b_1 are likely to be biased since households owning a greater amount of housing wealth may also behave differently than poorer households when it comes to decisions

[3] By household head, we mean the husband if the respondent is married and living with a spouse, and the respondent otherwise (whether male or female).

regarding intergenerational transfers. For example, wealthier individuals may have better educated or higher ability children who provide them with greater financial assistance, or alternatively, who require less financial assistance from parents. In addition, reverse causality may be at play here. Respondents who receive more transfers from children on a regular basis may save this source of income and would have larger holdings of financial assets as a result.

For these reasons, we employ an instrumental variables approach, using estimates of the housing market windfall as instruments for housing wealth. The following two-stage least-squares regressions are estimated:

Stage 1:

$$(\text{Housing Wealth})_i = b_0 + b_1 Z_i + b_2 X_{ij} + b_3 X_i + \mu_c + \varepsilon_{ij} \quad (2)$$

Stage 2:

$$\text{Transfers}_{ij} = b_0 + b_1(\text{Estimated Housing Wealth})_i + b_2 X_{ij} + b_3 X_i + \mu_c + \varepsilon_{ij} \quad (3)$$

where Z_i is our instrument for housing wealth. The instrumental variable used here is the difference between the current housing market value and the price at which the house was originally purchased if it is still currently owned, combined with the difference between the price at which any work unit housing was sold and its purchase price.

There are a number of potential endogeneity issues that need to be addressed here. Housing with higher markups over time is likely to be better than average quality. The type of person who is allocated this type of housing and can afford to purchase it (perhaps even with a subsidy) may be different from the average person. Some may choose to work in a work unit in order to receive subsidized housing in a good location. In addition, living arrangement decisions may be impacted directly by these changes in the housing market, which would also impact intergenerational transfers.

In order to examine the extent to which such biases may affect our estimates, we examine whether a child's characteristics are affected by the housing market windfall or total housing value. We also examine whether living arrangement decisions of adult children are impacted by these wealth measures.

Semi-Parametric Analysis

In order to determine transfer motives, recent studies in developing countries examining the relationship between transfers and recipient pre-transfer income have emphasized the non-linearity of the relationship (Cox et al. 2004, Cai et al. 2006). While OLS and IV results do not necessarily point towards a strong relationship between wealth and transfers, a semi-parametric model indicates this is likely due to a non-linear relationship between housing wealth and transfers. In order to examine this more closely, we follow the semi-parametric approach used by Cai et al. (2004) and described in greater detail by Yatchew (1998, 2003).

In this partial linear model,

$$\text{Transfers}_{ij} = f(W_i) + \mathbf{X'}_{ij}\gamma_1 + \mathbf{X'}_i\gamma_2 + \varepsilon_{ij} \qquad (4)$$

where W_i is either recipient housing wealth or housing windfall, $\mathbf{X'}_{ij}$ is a vector of other exogenous variables specific to each child which influence transfers, and $\mathbf{X'}_i$ is a vector of exogenous variables specific to each recipient which also influence transfers. These regressors are the same as those used previously in the linear estimates. Similarly to Cai et al. (2006), we use net transfers received as the main dependent variable, and gross transfers received as a robustness check. If transfers are altruistically motivated, then the derivative between transfers and wealth or windfall would be negative, since children would provide fewer transfers to parents who are in less need of them.

In order to estimate the function $f(W_i)$, observations are ranked by housing wealth or windfall depending on the variable of interest. We also further rank the observations by non-housing wealth, per capita household income, and then education level of the household head. Once the observations are ranked, we difference across neighboring observations:

$$\Delta_j Transfers_{ij} = \Delta_j f(W_i) + \Delta_j \mathbf{X'}_{ij}\gamma_1 + \Delta_j \mathbf{X'}_i\gamma_2 + \Delta_j\varepsilon_{ij} \qquad (5)$$

Since W_i is bounded as the sample increases, $\Delta_j f(W_i) \approx 0$ as $f(W_i) - f(W_i\text{-}1)$ goes to zero. This implies that:

$$\Delta_j Transfers_{ij} = \Delta_j \mathbf{X'}_{ij}\gamma_1 + \Delta_j \mathbf{X'}_i\gamma_2 + \Delta_j\varepsilon_{ij} \qquad (6)$$

So long as W_i is not perfectly correlated with $\mathbf{X}_{ij}$ and $\mathbf{X}_i$, OLS estimates of γ_1 and γ_2 are consistent. In order to estimate $f(W_i)$, we use the estimated coefficients γ_1 and γ_2 to calculate:

$$u_{ij} = Transfers_{ij} - \mathbf{X'}_{ij}\gamma_1 - \mathbf{X'}_i\gamma_2 = f(W_i) + \varepsilon_{ij} \qquad (7)$$

Assuming ε_{ij} are independent and identically distributed, u_{ij} converges to $f(W_i)$ for large enough sample sizes.

In order to estimate the non-parametric relationship $f(W_i)$, we then use a locally weighted regression (lowess). We use a bandwidth of 0.95 with observations weighted using a tri-cube weighting function calculated by the lowess command in Stata. A lowess estimator is used as opposed to a Kernel estimator because it does not suffer from bias at the end points.

IV. Empirical Results

OLS Results

Table 2 summarizes results from OLS estimations where net and gross transfers received from adult non-resident children are the dependent variables and housing wealth is the main independent variable. All monetary values were deflated by the urban CPI to 1978 RMB values.

For each dependent variable, the first regression assumes a linear relationship between wealth and transfers, while the second regression includes a squared term for wealth.

[Table 2 here]

Coefficient estimates on housing wealth are not statistically significant. In the linear form, the coefficient on wealth is negative, pointing towards altruistic motives behind transfers. However, when a squared term for wealth is added to the regression, the coefficient on housing wealth is positive.

Of the other variables in the regression, the only regressor with statistically significant coefficients is the dummy variable for whether the child is working. Perhaps not surprisingly, children who are working provide significantly more transfers to their parents, net of the transfers they receive from them. In the regressions on gross transfers received from children, only the age of the child is statistically significant. Older children give fewer transfers to parents. However, it is also important to note that when the dependent variable is net transfers, coefficient estimates on child age are much lower in magnitude and standard errors are quite high.

Coefficient estimates on housing wealth may be underestimating the effect of wealth on transfers if wealthier households have children who are also wealthier and provide additional resources to their parents as a result of their improved positions. By instrumenting for wealth with windfalls arising from housing reform, we can identify the effects of an increase in wealth on transfers.

Indeed, in Table 3, where the main regressor is the housing windfall, results indicate a strongly negative linear relationship between housing windfall and transfer receipts. When the windfall term is entered linearly, coefficient estimates are negative and statistically significant. However, when a squared term is added to the regressions, the coefficient estimate on housing

windfall in the regression on net transfers is positive but not statistically significant. In the results below, we will see that this negative relationship persists.

[Table 3 here]

IV Results

Results of the first stage of two-stage least-squares regressions are summarized in Table 4. Coefficient estimates on housing windfall are statistically significant and very close to one (1.101), particularly when housing wealth is instrumented by the windfall. In the second two regressions shown in this table, housing wealth and housing wealth squared are instrumented by windfall and windfall squared. The coefficient estimate on windfall is also statistically significant and close to one.

[Table 4 here]

Additional factors that are statistically significant determinants of household wealth are the number of non-adult children, whether the adult child lives outside the local neighborhood, and the gender and age of the child. Respondents with more non-adult children are less wealthy. This may be because they draw down on housing assets to pay for child schooling expenses. Respondents with daughters, older adult children, and children who live outside the local neighborhood are significantly wealthier. Below, we will find that such child characteristics may be influenced by respondent wealth.

In the second stage of the IV, coefficient estimates on housing wealth are negative and statistically significant (Table 5 below). An increase in housing wealth of 10,000 RMB results in a decline in transfers received from children of roughly 22 RMB. These estimates indicate that OLS estimates were underestimating the effect of housing wealth on transfer receipts. Respondents with more housing wealth may have wealthier children who would provide more to

their parents, or would need less assistance from parents. However, an exogenous increase in housing wealth indicates that parents do indeed receive less transfers from their children, pointing towards evidence of altruism.

[Table 5 here]

As in the OLS estimates, children who are working transfer considerably more to their parents net of transfers received from them. Respondents receive fewer gross transfer receipts from older children.

Results of the Partial Linear Model

In the results above we have found that OLS estimates of housing wealth on transfers indicate there is no statistically significant relationship between the two. However, IV estimates point towards evidence of altruistic motives behind transfer behavior, indicating that OLS estimates are likely to suffer from unobserved selection bias. In this section, we apply a partial linear model outlined above to examine whether the linear relationship may be underestimating the degree to which transfer motives are altruistic because transfers at higher wealth levels may not be as greatly affected by marginal increases in wealth, with altruism being strongest for lower levels of wealth.

In order to apply this partial linear model, we first estimate γ_1 and γ_2 from equation (6) above. Results are summarized in Table 6 below. Coefficient estimates are shown for both net and gross transfer receipts. Since we are interested in estimating the non-linear relationship between housing wealth and transfers, as well as between the housing windfall and transfers, the sample was ranked first by windfall and then differenced in order to obtain estimates in the first two columns of Table 6. The sample was also ranked by housing value and then differenced, in order to obtain the last two columns of Table 6.

[Table 6 here]

In all of these regressions, coefficients on the dummy variable for whether the child is currently working are statistically significant. As in previous linear estimates, employed children provide more transfers to their parents, both in net and gross. The age of the child is statistically significant only in the final column, where the dependent variable is the difference in gross transfers, and where observations were initially ranked by housing wealth. Conditional on the other regressors, older children provide parents with less transfers, but not net of the transfers they receive from their parents.

Lowess estimates of $f(W_i)$ in equation (7) above indicate that the relationship between housing wealth and net transfers is relatively flat (see Figure 4a below). There is a slight upward trend which flattens at a housing value of around 280,000 RMB. This indicates that there may be a slight non-parametric relationship between housing wealth and net transfers. However, this relationship is not maintained when we examine the effect of housing wealth on gross transfer receipts. Figure 4b shows a slight decline in transfer receipts with rising housing wealth, and this relationship becomes less steep at a housing wealth value of around 280,000 RMB. These figures indicate that wealthier parents may be providing fewer transfers to their children, and this may be due to the fact that their children are also wealthier. This would bias us against finding evidence of altruistic transfer motives.

[Figures 4a and 4b here]

In order to examine whether this might be the case, Figures 5a and 5b show the non-parametric lowess relationship between transfer receipts and housing windfall. Both of these figures indicate that net and gross transfer receipts decline with housing windfalls. If housing

windfalls are unrelated to child characteristics, then these lowess estimates point towards an altruistic transfer motive. Transfer receipts decline with this measure of recipient wealth.

[Figures 5a and 5b here]

These non-parametric estimates also indicate that linear estimates underestimate the relationship between transfers and housing windfall. There is a kink at a housing windfall of around 110,000 RMB, at which point the function declines at a flatter rate. Thus, windfall and transfer receipts are more strongly negatively related at lower wealth levels, with altruism playing a stronger role at these lower levels. At higher windfall levels, transfers also decline, but at a slower rate.

Living arrangements and characteristics of adult children

While the empirical results above indicate that transfer motives are altruistic in this context, the relationship between transfers and housing wealth may be confounded by the fact that parents with higher housing wealth live in nicer and larger accommodations which may be more attractive places for adult children to live in with their parents. Results of probit estimates in Table 7 indicate that children are in fact more likely to live with parents whose housing wealth is greater or who received a higher windfall. Unlike in previous regressions, these estimates are based on the sample of all adult children. While previous regressions included only non-resident adult children, these estimates also include co-resident adult children.

[Table 7 here]

Children are statistically significantly more likely to live with their parents when housing wealth or windfall enters the regression linearly only. Children are less likely to co-reside with parents if their parents are married (that is, both are still living). Younger adult children and

daughters are less likely to live with their parents. Not surprisingly, coefficient estimates on household size are also statistically significant and positive.

While housing wealth and windfalls increase the probability that adult children live with their parents, only housing wealth raises the likelihood that adult children live outside the local neighborhood, and this coefficient estimate is only statistically significant when a squared term for housing wealth is included. These results seem to be driven by non-resident children. Although not shown, results for non-resident children are very similar. Interestingly, coefficient estimates on the housing windfall are not statistically significant.

These results indicate that children are more likely to live with their parents when housing wealth increases, but the windfall their parents receive does not impact their decision of whether to live nearby but not with the parents. Since the analysis above was based on non-resident children, estimates using housing windfall as an estimate of housing wealth would not be biased by any influence of housing value on a child's living arrangement decisions.

Results of ordered logistic regressions indicate that housing values and windfalls are not statistically significantly correlated with child's education (see Table 8 below). To the extent that the highest education level achieved is a reasonable proxy for income, these regressions indicate that respondents with higher housing wealth do not generally have better off children. However, coefficient estimates on non-housing asset wealth are statistically significant and positive. Thus, non-housing wealth would not be an exogenous measure of wealth to be used for estimating transfer motives, since it is strongly correlated with child characteristics. Yet this is not the case for housing wealth.

[Table 8 here]

When the dependent variable is child age, coefficient estimates on housing wealth are also not statistically significant, and magnitudes are relatively low. However, housing windfall is strongly negatively correlated with child age, and the coefficient estimates are statistically significant. This is not due to the timing of housing reforms since dummy variables for the year of purchase are included as control variables. One source of the difference between housing value and windfall is that the windfall includes all housing bought from a work unit and subsequently sold, whereas the housing value only includes currently owned housing. If respondents with younger children were more likely to sell their housing in order to buy housing to accommodate younger children, or to help them buy their own housing (especially if they are too young to be eligible for their own windfall), this may be one explanation for this correlation. This indicates the importance of controlling for child age in all regression estimates.

V. Conclusion

We have shown that housing reform policies have significantly raised housing market values. Employees of work units were allocated housing by their employers, were then given the right to buy this housing at subsidized rates, and benefited considerably as private housing markets developed and housing prices rose considerably. We have shown that such windfalls have had a considerable impact on household wealth, and that family members take this into consideration when providing financial help to windfall recipients. Those who benefited from such windfalls receive considerably less financial help from children, indicating that transfers from children are likely to be altruistically motivated.

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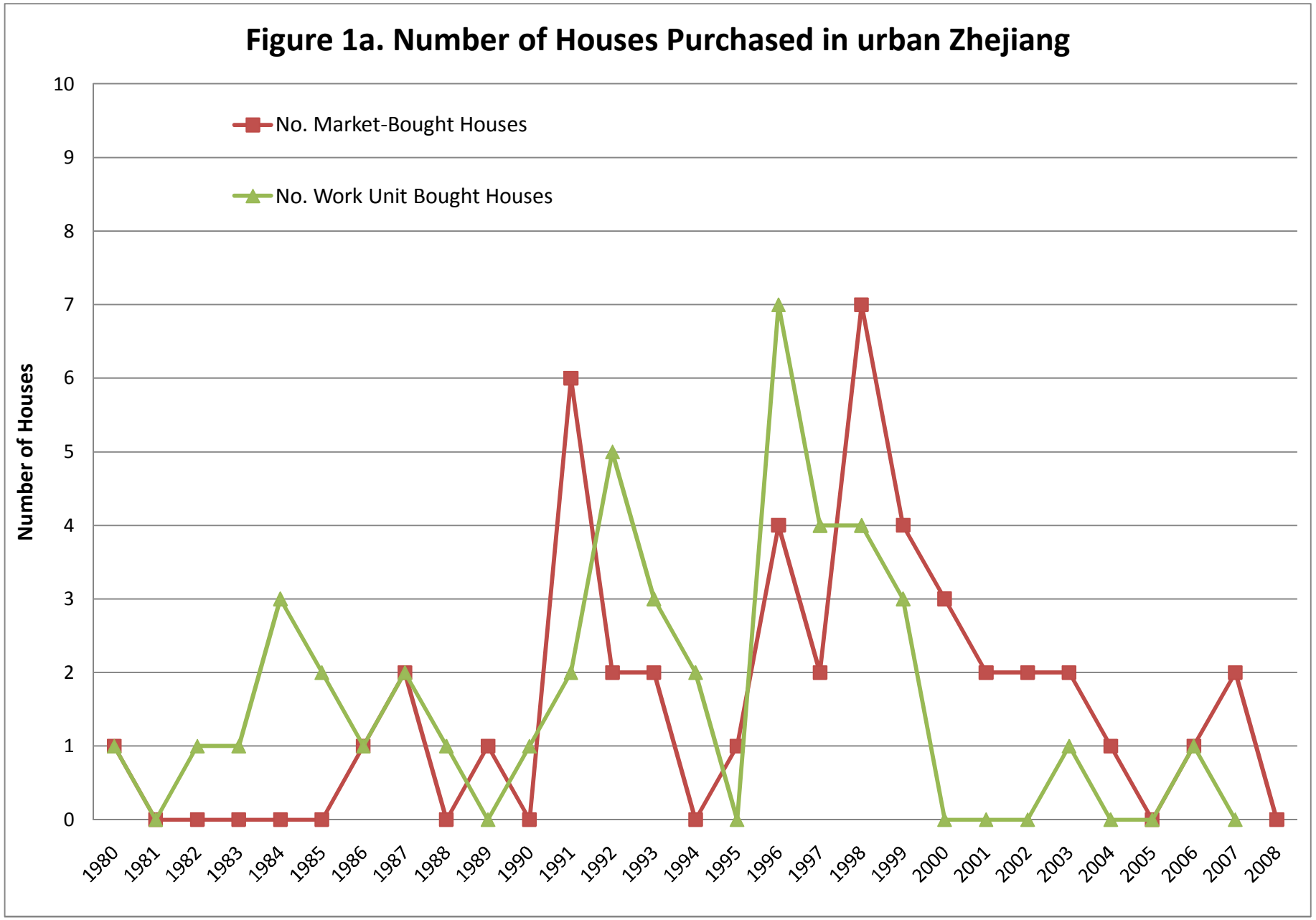


Figure 1a. Number of Houses Purchased in urban Zhejiang
No. Market-Bought Houses
No. Work Unit Bought Houses
Number of Houses
10
9
8
7
6
5
4
3
2
1
0
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008

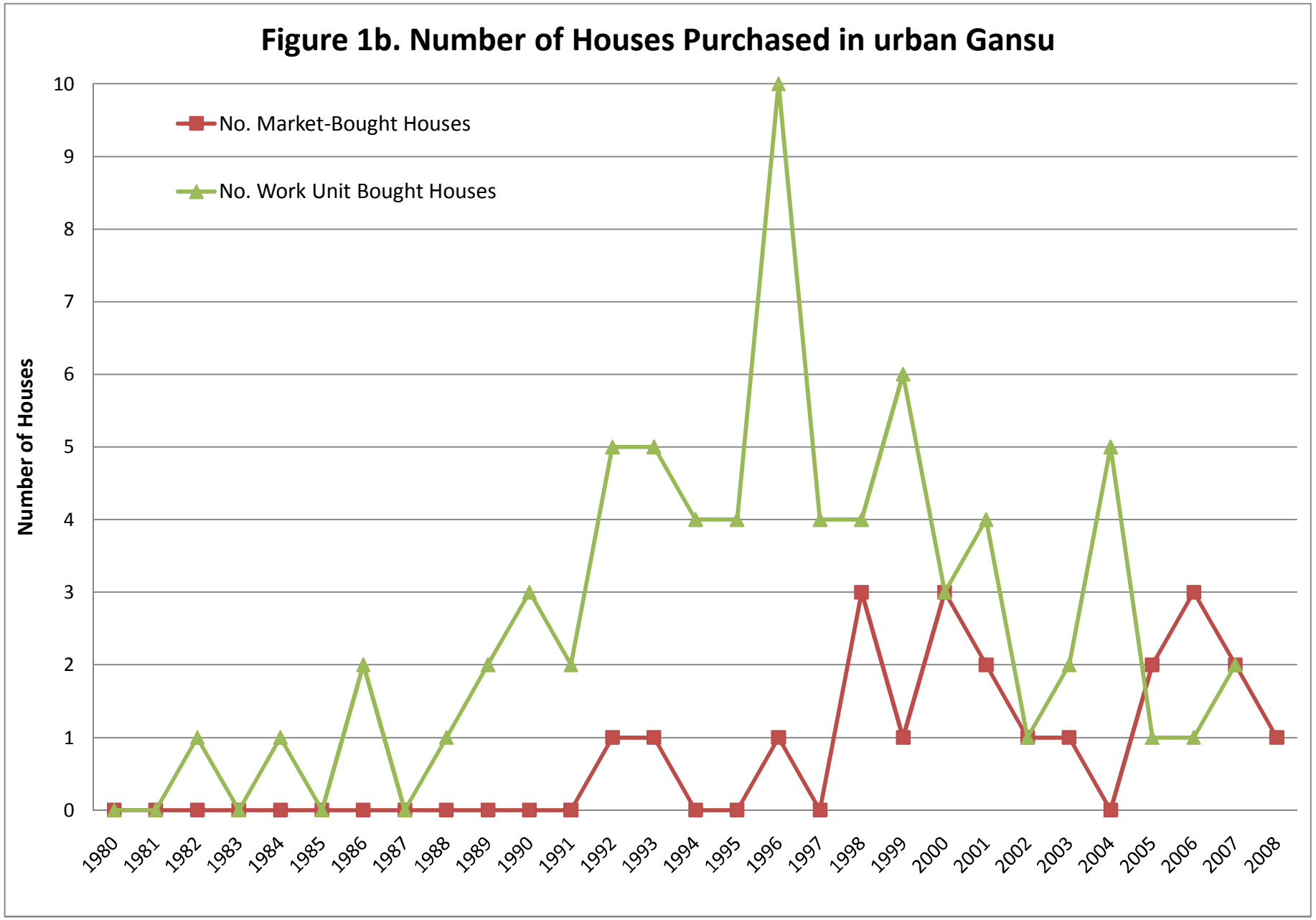


Figure 1b. Number of Houses Purchased in urban Gansu
No. Market-Bought Houses
No. Work Unit Bought Houses
Number of Houses
0
1
2
3
4
5
6
7
8
9
10
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008

Figure 2a. Average Current Market Value of Houses in urban Zhejiang

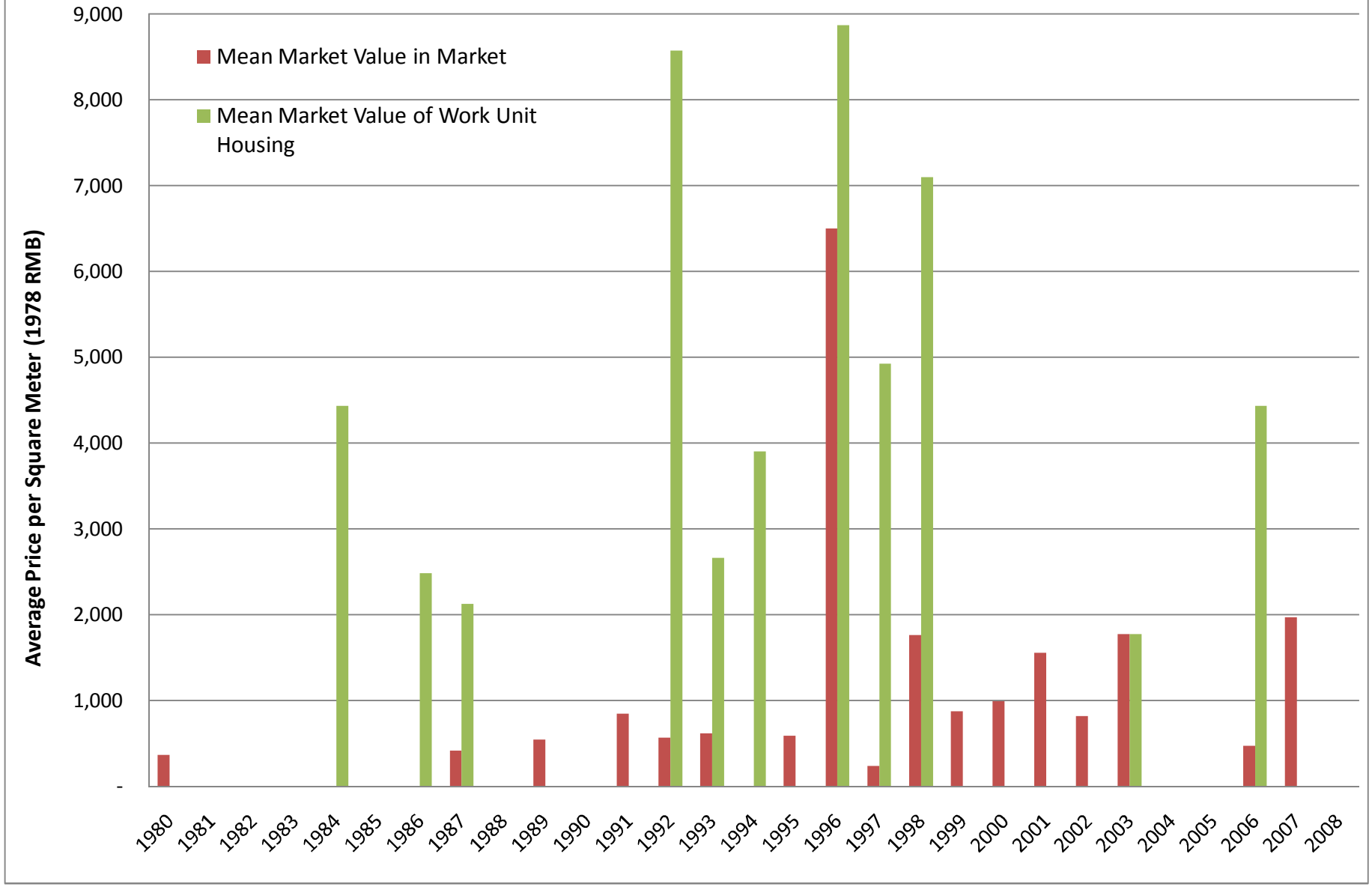
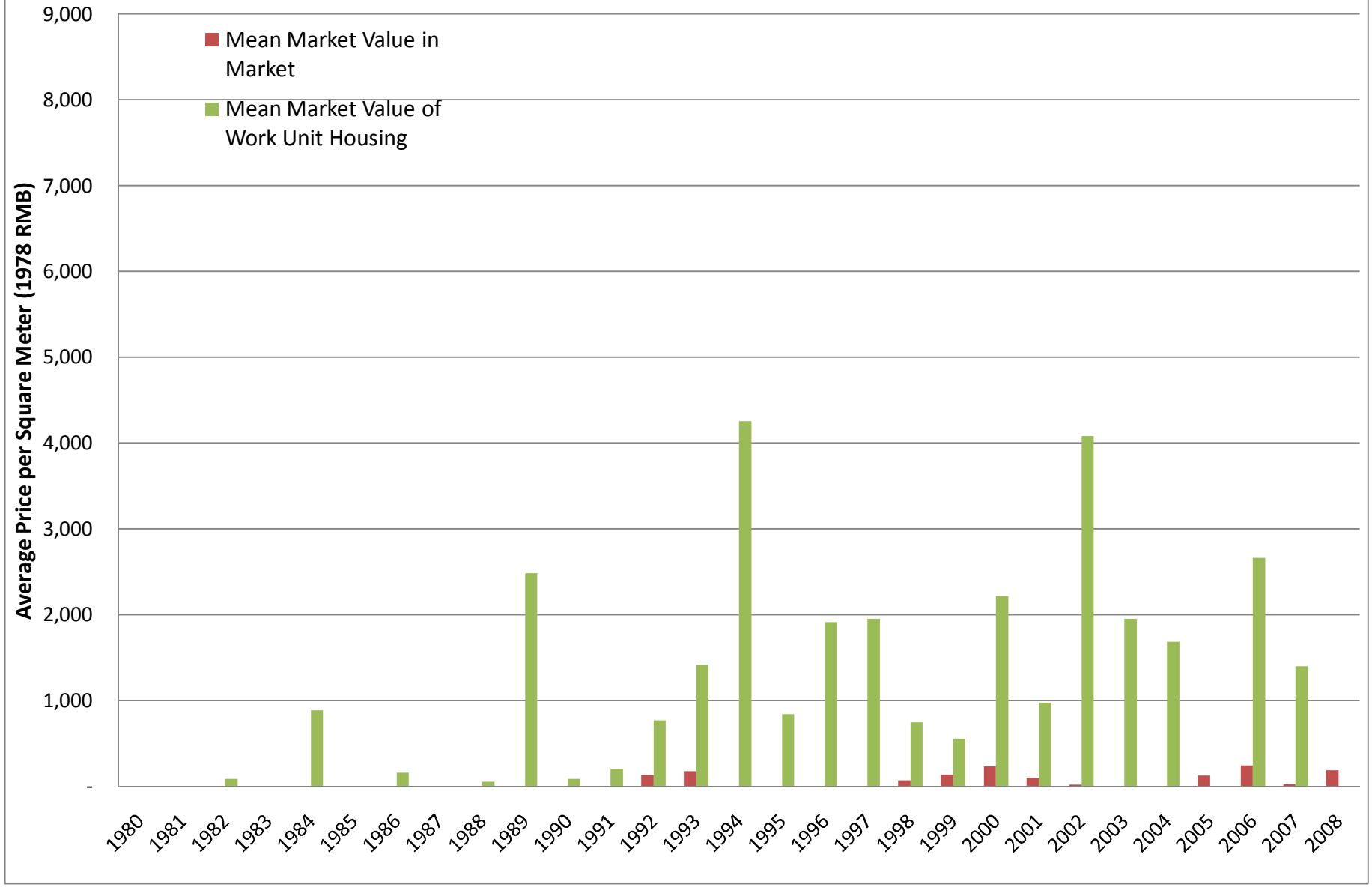


Figure 2b. Average Current Market Value of Houses in urban Gansu



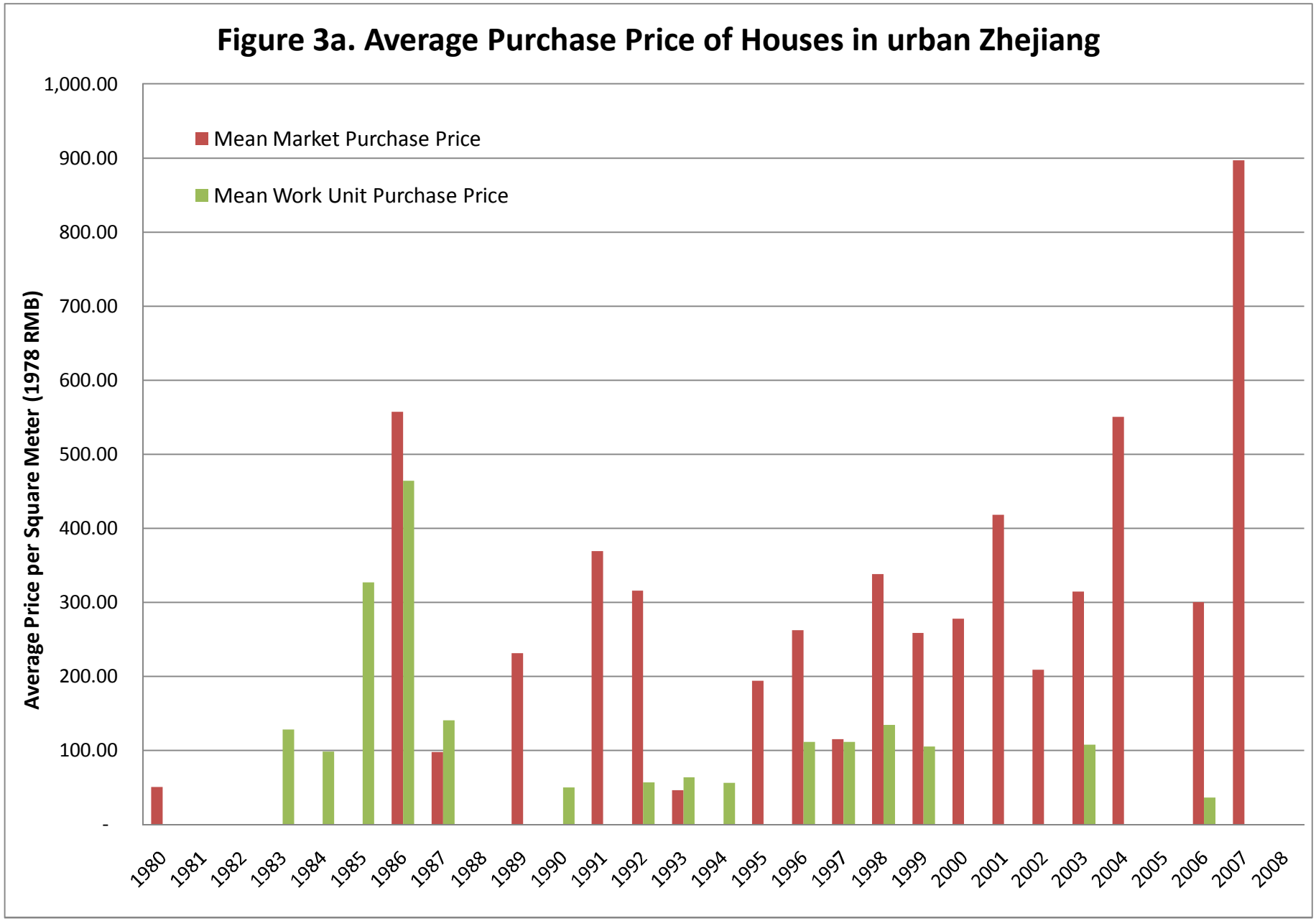


Figure 3a. Average Purchase Price of Houses in urban Zhejiang
Average Price per Square Meter (1978 RMB)
1,000.00
900.00
800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
-
Mean Market Purchase Price
Mean Work Unit Purchase Price
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008

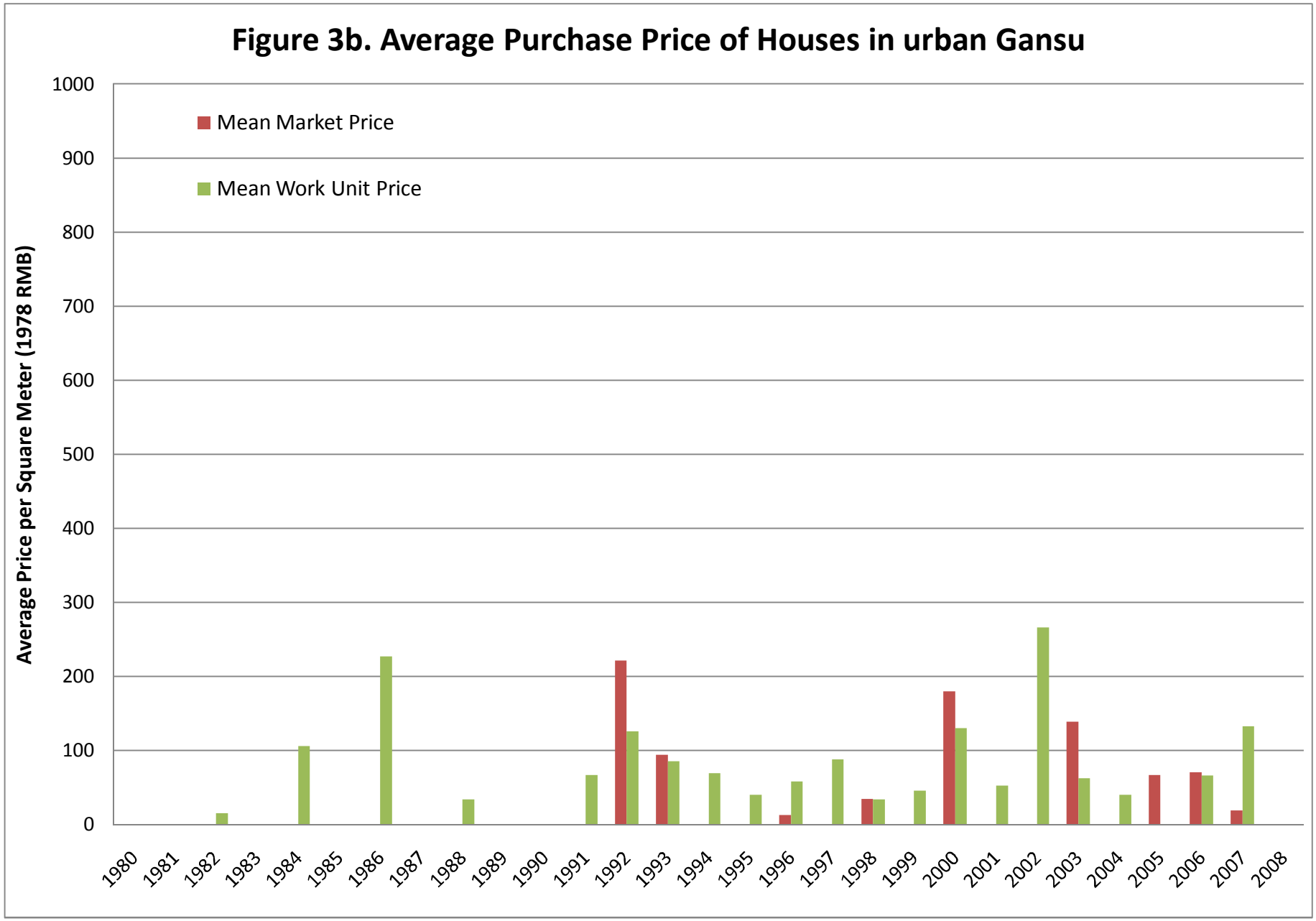


Figure 3b. Average Purchase Price of Houses in urban Gansu
Average Price per Square Meter (1978 RMB)
1000
900
800
700
600
500
400
300
200
100
0
Mean Market Price
Mean Work Unit Price
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
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2000
2001
2002
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2005
2006
2007
2008

Figure 4a. Net transfers as a function of Housing Wealth

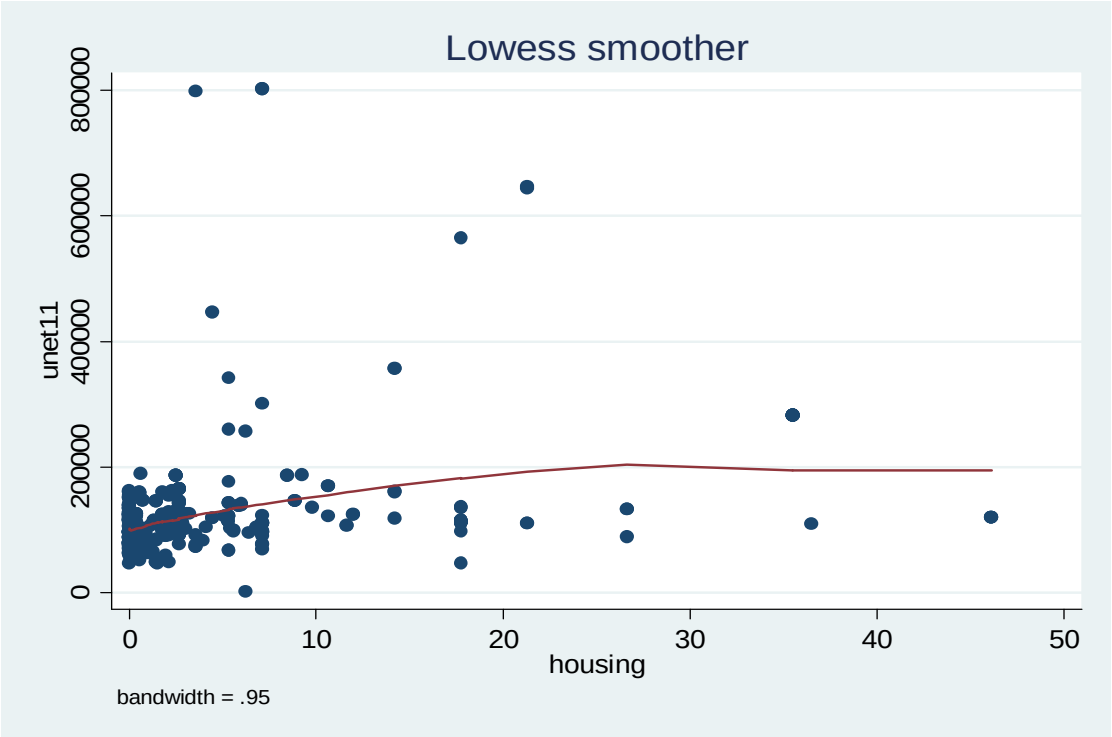

Figure 4b. Gross transfers as a function of Housing Wealth

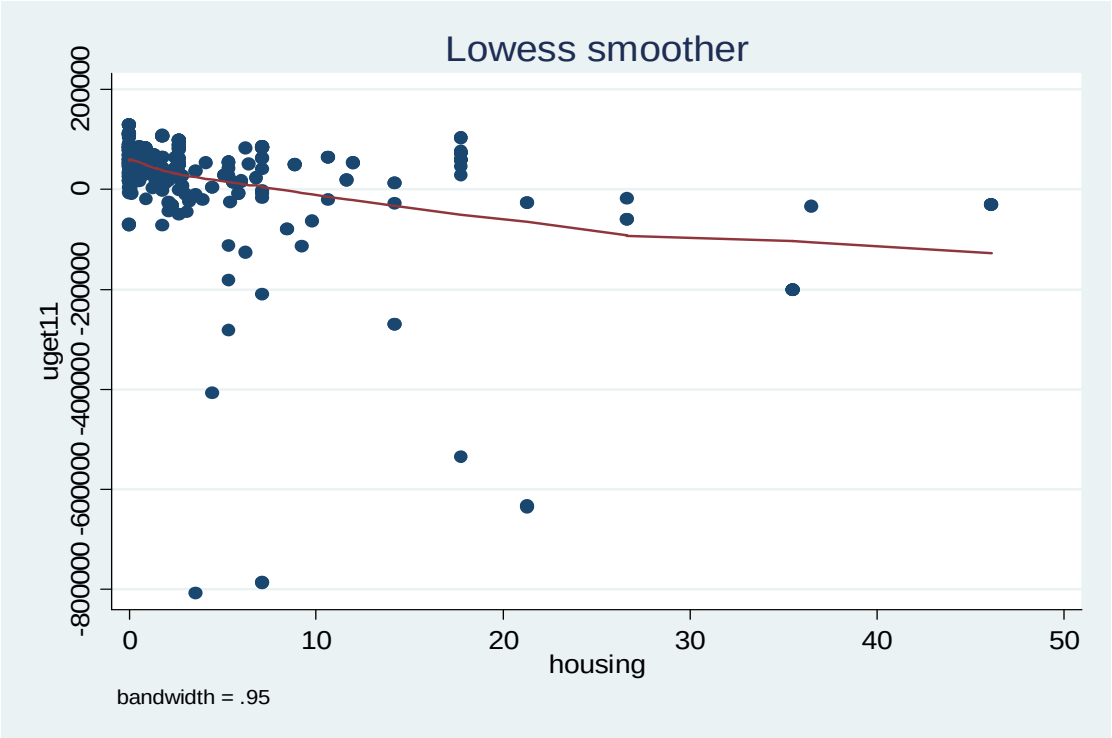

Figure 5a. Net transfers as a function of Housing Windfall

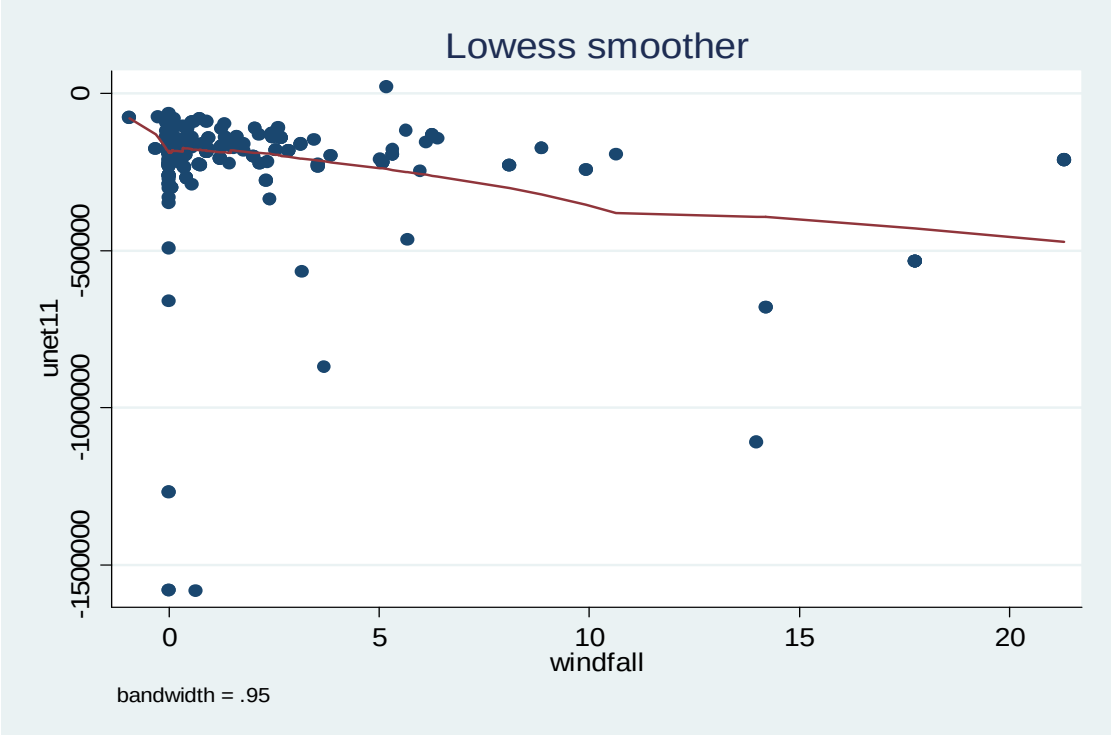

Figure 5b. Gross transfers as a function of Housing Windfall

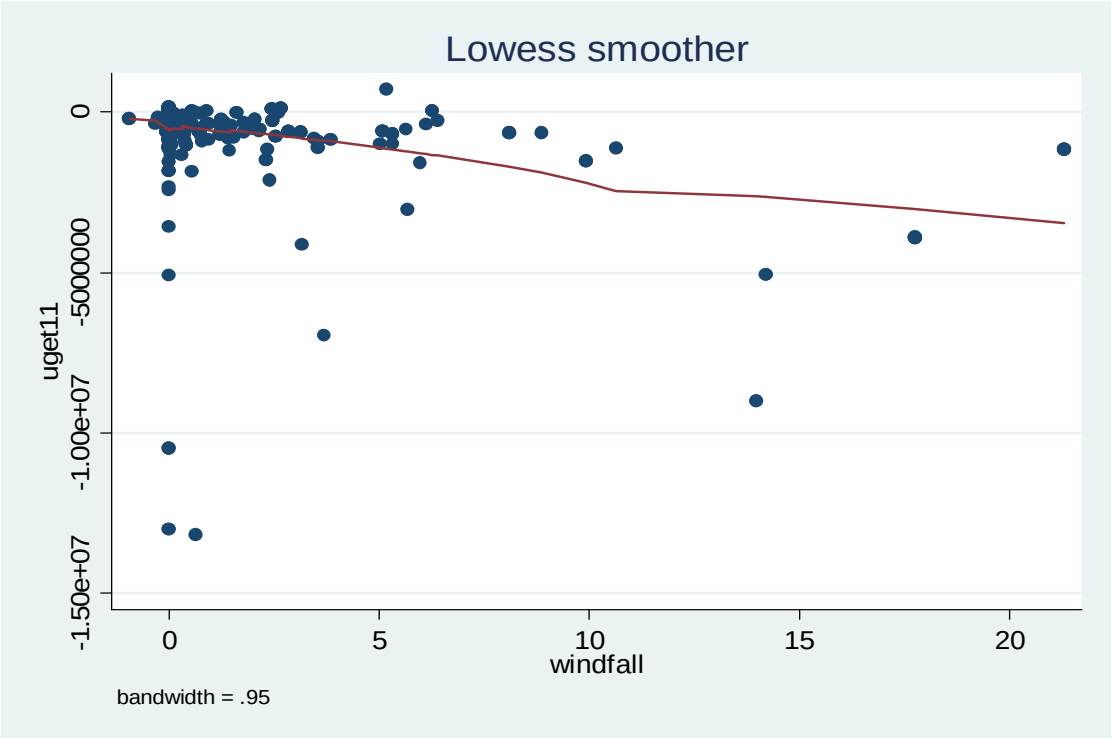

Table 1. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Net transfers received	447	42.56	548.00	(7,095.83)	4,081.63
Gross transfers received	447	93.39	318.69	-	4,081.63
Windfall (10,000 RMB)	447	2.01	5.19	(0.95)	35.49
Housing value (10,000 RMB)	447	6.21	12.13	-	62.11
Non-housing assets (10,000 RMB)	447	1.72	14.80	(45.38)	150.38
Year 1st bought housing (if bought housing)	210	1,995.94	6.48	1,970.00	2,008.00
Bought housing = 1	447	0.57	0.50	-	1.00
Respondent is marrried	447	0.71	0.45	-	1.00
Household size	447	2.40	1.16	1.00	7.00
Number of non-adult children	447	0.03	0.16	-	1.00
Per capita household income	447	3,727.35	7,051.84	(2,484.47)	49,263.53
Age of household head*	447	63.41	10.55	46.00	89.00
Household head employed by public sector	447	0.34	0.47	-	1.00
Highest education level of household head	447	4.00	2.24	1.00	12.00
Number of adult brothers of child	447	0.98	1.01	-	5.00
Number of adult sisters of child	447	0.77	1.01	-	6.00
Child lives outside local area	441	0.75	0.43	-	1.00
Gender of child	447	1.50	0.50	1.00	2.00
Age of child	447	35.16	10.84	16.00	77.00
Highest education level of child	447	5.62	1.72	1.00	10.00
Child is currently working	447	0.67	0.47	-	1.00

* Household head is male respondent if married, female respondent if widowed.

All RMB values were deflated to 1978 RMB values.

Means and standard errors were estimated using household sampling weights.

Sample includes urban respondents with non-resident adult children .

Significant outliers were excluded from the sample.

Table 2. Effect of housing value on transfers: OLS results

	Net Transfers		Gross Transfers	
Housing value	-9.566	10.563	-1.209	4.478
	(6.175)	(10.310)	(2.287)	(8.239)
Housing value squared		-0.385		-0.11
		(0.248)		(0.146)
Non-housing assets	0.927	-5.06	3.191	3.279
	(4.767)	(8.190)	(3.592)	(3.869)
Non-housing assets squared		0.056		-0.002
		(0.068)		(0.039)
Respondent is married	-131.007	-124.654	-79.472	-79.995
	(93.049)	(95.054)	(50.141)	(49.973)
Household size	23.547	20.147	-5.475	-4.062
	(31.759)	(31.819)	(26.166)	(25.044)
Age of household head	-7.891	-7.311	17.726	16.825
	(34.460)	(34.702)	(20.841)	(20.775)
Age of household head squared	0.098	0.098	-0.081	-0.072
	(0.248)	(0.250)	(0.150)	(0.150)
Number of non-adult children	-49.243	-22.927	-54.631	-52.455
	(158.263)	(160.590)	(77.307)	(79.024)
Per capita household income	0.001	-0.001	0	0
	(0.006)	(0.007)	(0.004)	(0.004)
Household head employed in public sector	-9.731	-30.803	-26.238	-32.53
	(70.943)	(71.844)	(47.478)	(50.045)
Child lives outside local area = 1	-32.718	-30.869	-25.399	-26.49
	(59.182)	(58.942)	(37.635)	(38.284)
Child is female = 1	21.143	12.067	-37.107	-38.136
	(72.599)	(74.394)	(47.427)	(47.107)
Age of child	0.199	-0.163	-5.809**	-5.853**
	(4.330)	(4.164)	(2.839)	(2.824)
Age of child squared	8.455	5.488	0.288	-0.23
	(20.943)	(19.826)	(15.343)	(15.001)
Child is currently working	146.194**	143.440**	65.478	64.027
	(72.443)	(71.366)	(51.695)	(52.195)
Observations	423	423	423	423
R-squared	0.2052	0.2148	0.2088	0.2101

Notes: *** p<0.01, ** p<0.05, * p<0.1 Standard errors in parentheses clustered by household. Additional regressors include: dummies for 5-year intervals of house purchase year, dummies for highest education level of household head (male respondent if married, female respondent if widowed), dummies for number of brothers and sisters, and community fixed effects.

Table 3. Effect of windfall on transfers: OLS results

	Net Transfers		Gross Transfers	
Windfall	-24.362*	4.391	-11.286***	-15.079
	(12.675)	(19.885)	(3.846)	(10.069)
Windfall squared		-0.953		0.094
		(0.902)		(0.283)
Non-housing assets	1.417	1.026	3.337	5.851
	(3.974)	(6.466)	(3.304)	(3.776)
Non-housing assets squared		0.009		-0.025
		(0.054)		(0.035)
Respondent is married	-125.166	-128.639	-67.703	-69.464
	(94.937)	(96.775)	(49.885)	(50.329)
Household size	15.735	13.873	-9.764	-6.68
	(29.390)	(29.643)	(24.838)	(23.495)
Age of household head	1.432	-8.222	20.509	20.215
	(33.855)	(35.439)	(19.876)	(20.297)
Age of household head squared	0.031	0.11	-0.105	-0.103
	(0.245)	(0.259)	(0.143)	(0.147)
Number of non-adult children	-6.82	-12.784	-46.121	-52.246
	(155.305)	(159.136)	(76.316)	(77.513)
Per capita household income	0.002	0.002	0.002	0.002
	(0.005)	(0.006)	(0.004)	(0.004)
Household head employed in public sector	9.229	3.388	-20.85	-20.253
	(70.252)	(69.879)	(46.676)	(46.705)
Child lives outside local area = 1	-42.567	-45.778	-26.461	-28.415
	(60.167)	(60.945)	(36.845)	(37.262)
Child is female = 1	2.632	10.533	-42.977	-42.085
	(72.491)	(73.117)	(46.324)	(46.104)
Age of child	-1.374	-0.731	-6.413**	-6.445**
	(3.932)	(4.089)	(2.836)	(2.863)
Age of child squared	7.741	7.636	1.472	2.048
	(21.150)	(20.589)	(15.739)	(15.737)
Child is currently working	149.256**	149.346**	68.862	68.246
	(71.559)	(71.236)	(52.303)	(52.725)
Observations	423	423	423	423
R-squared	0.2194	0.2234	0.2216	0.223

Notes: *** p<0.01, ** p<0.05, * p<0.1 Standard errors in parentheses clustered by household. Additional regressors include: dummies for 5-year intervals of house purchase year, dummies for highest education level of household head (male respondent if married, female respondent if widowed), dummies for number of brothers and sisters, and community fixed effects.

Table 4. First stage of IV results

		Housing Value	Housing squared
Windfall	1.101***	0.780**	33.358
	(0.124)	(0.300)	(21.860)
Windfall squared		0.013	0.95
		(0.012)	(1.041)
Non-housing assets	-0.036	-0.232	-13.934
	(0.058)	(0.217)	(15.950)
Non-housing assets squared		0.002	0.105
		(0.002)	(0.123)
Respondent is married	1.332	1.552	79.124
	(1.383)	(1.389)	(73.838)
Household size	0.235	0.025	11.333
	(0.467)	(0.333)	(16.331)
Age of household head	-0.692	-0.457	-27.726
	(0.696)	(0.621)	(32.835)
Age of household head squared	0.004	0.002	0.164
	(0.005)	(0.005)	(0.237)
Number of non-adult children	-3.880*	-3.252	-139.222
	(2.282)	(2.135)	(94.719)
Per capita household income	0.000*	0	0.002
	(0.000)	(0.000)	(0.007)
Household head employed in public sector	-1.455	-1.376	-126.91
	(1.412)	(1.402)	(77.884)
Child lives outside local area = 1	1.062*	1.291**	60.417
	(0.621)	(0.644)	(37.075)
Child is female = 1	1.313*	1.068	41.764
	(0.772)	(0.793)	(43.154)
Age of child	0.093*	0.082*	3.602
	(0.048)	(0.049)	(2.461)
Age of child squared	0.299	0.254	7.855
	(0.269)	(0.266)	(12.874)
Child is currently working	0.208	0.256	0.742
	(0.963)	(0.863)	(51.949)
Observations	423	423	423
R-squared	0.7412	0.7512	0.6919

Notes: *** p<0.01, ** p<0.05, * p<0.1 Standard errors in parentheses clustered by household. Additional regressors include: dummies for 5-year intervals of house purchase year, dummies for highest education level of household head (male respondent if married, female respondent if widowed), dummies for number of brothers and sisters, and community fixed effects.

Table 5. Second stage of IV

	Net Transfers		Gross Transfers	
Housing value	-22.124**	119.824	-10.249***	-58.197
	(10.033)	(196.284)	(3.528)	(108.272)
Housing value squared		-2.67		0.909
		(3.747)		(2.097)
Non-housing assets	0.613	-8.363	2.965	5.003
	(4.310)	(17.475)	(3.416)	(5.920)
Non-housing assets squared		0.069		-0.014
		(0.135)		(0.044)
Respondent is married	-95.686	-103.319	-54.046	-51.053
	(102.918)	(117.588)	(54.690)	(67.429)
Household size	20.936	41.118	-7.355	-15.514
	(30.968)	(60.812)	(25.360)	(36.140)
Age of household head	-13.878	-27.516	13.416	18.825
	(36.977)	(54.014)	(23.152)	(30.244)
Age of household head squared	0.123	0.279	-0.063	-0.121
	(0.267)	(0.437)	(0.167)	(0.236)
Number of non-adult children	-92.671	5.183	-85.893	-115.004
	(184.605)	(249.408)	(81.169)	(121.848)
Per capita household income	0.005	-0.003	0.003	0.006
	(0.006)	(0.014)	(0.005)	(0.007)
Household head employed in public sector	-22.965	-170.588	-35.764	14.991
	(80.787)	(237.731)	(52.956)	(137.182)
Child lives outside local area = 1	-19.075	-39.157	-15.578	-8.182
	(61.990)	(80.596)	(36.688)	(44.999)
Child is female = 1	31.685	-5.889	-29.518	-17.9
	(74.348)	(94.543)	(50.160)	(59.998)
Age of child	0.684	-0.887	-5.459*	-4.971
	(4.413)	(5.559)	(2.952)	(3.411)
Age of child squared	14.356	-1.881	4.537	9.719
	(22.749)	(34.096)	(16.244)	(21.887)
Child is currently working	153.852**	120.672	70.991	82.461
	(74.826)	(101.564)	(54.693)	(68.000)
Observations	423	423	423	423
R-squared	0.1806		0.1812	0.0728

Notes: *** p<0.01, ** p<0.05, * p<0.1 Standard errors in parentheses clustered by household. Additional regressors include: dummies for 5-year intervals of house purchase year, dummies for highest education level of household head (male respondent if married, female respondent if widowed), dummies for number of brothers and sisters, and community fixed effects.

Table 6.Partial linear model: gamma values

	Windfall		Housing Value	
	Net Transfers	Gross Transfers	Net Transfers	Gross Transfers
Non-housing assets (10,0000 RMB)	2.244	3.086	2.979	3.297
	(3.114)	(2.103)	(3.003)	(2.113)
Per capita household income	0.004	0.006	0.005	0.005
	(0.008)	(0.005)	(0.007)	(0.005)
Household head employed in public sector	10.513	-54.262	21.017	-30.329
	(105.842)	(71.491)	(105.301)	(74.102)
Respondent is married	-100.679	34.262	-86.217	-16.918
	(131.791)	(89.018)	(126.110)	(88.745)
Age of household head	-11.485	16.627	-54.667	-17.289
	(58.881)	(39.771)	(57.412)	(40.401)
Age of household head squared	0.13	-0.069	0.492	0.211
	(0.450)	(0.304)	(0.446)	(0.314)
Household size	23.205	-19.996	-16.957	-16.315
	(40.088)	(27.077)	(41.818)	(29.428)
Number of non-adult children	521.520*	-101.462	113.081	-129.864
	(284.465)	(192.142)	(286.444)	(201.574)
Child is currently working	147.885**	108.930**	159.605**	88.930*
	(70.779)	(47.808)	(69.030)	(48.577)
Gender of child	37.348	-21.007	103.704	-7.484
	(76.466)	(51.649)	(77.332)	(54.419)
Child lives outside local area = 1	-38.93	-17.909	-79.074	-8.095
	(68.433)	(46.223)	(65.293)	(45.948)
Age of child	-1.948	-6.643	1.087	-6.682*
	(6.059)	(4.093)	(5.701)	(4.012)
Highest education level of child	-30.462	-2.369	-17.12	1.33
	(24.784)	(16.740)	(23.798)	(16.747)
Observations	431	431	431	431
R-squared	0.1431	0.1612	0.214	0.1746

Notes: *** p<0.01, ** p<0.05, * p<0.1 Standard errors in parentheses. Additional regressors include: dummies for 5-year intervals of house purchase year, dummies for highest education level of household head (male respondent if married, female respondent if widowed), dummies for number of brothers and sisters, and community fixed effects.

Table 7. Effect of housing value and windfall on living arrangements of adult children
(marginal effects from probit estimation)

	Child lives with respondent				Child lives in local area			
Housing value	0.002*	0.001			0.005	0.020**		
	(0.001)	(0.002)			(0.006)	(0.010)		
Housing value squared		0				-0.001**		
		(0.000)				(0.000)		
Windfall			0.005**	0.002			-0.006	-0.006
			(0.003)	(0.003)			(0.009)	(0.025)
Windfall squared				0				-0.001
				(0.000)				(0.001)
Non-housing assets	-0.000*	0.002	0	0.002	-0.007**	0.006	-0.007*	0.009*
	(0.000)	(0.002)	(0.000)	(0.001)	(0.004)	(0.005)	(0.004)	(0.005)
Non-housing assets sq.		0		0		-0.000**		-0.000**
		(0.000)		(0.000)		(0.000)		(0.000)
Respondent is married	-0.106**	-0.101**	-0.096**	-0.094**	0.073	0.071	0.082	0.062
	(0.041)	(0.040)	(0.039)	(0.039)	(0.082)	(0.085)	(0.083)	(0.084)
Household size	0.039**	0.035**	0.036**	0.032**	-0.132***	-0.142***	-0.135***	-0.145***
	(0.017)	(0.016)	(0.017)	(0.016)	(0.023)	(0.024)	(0.023)	(0.024)
Age of household head	-0.002	-0.003	-0.005	-0.005	0.012	0.005	0.016	0.012
	(0.006)	(0.005)	(0.006)	(0.005)	(0.030)	(0.030)	(0.030)	(0.031)
Age of household head sq.	0	0	0	0	0	0	0	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
No. non-adult children	-0.011	-0.011	-0.007	-0.008	-0.063	-0.092	-0.062	-0.09
	(0.014)	(0.010)	(0.016)	(0.011)	(0.170)	(0.178)	(0.169)	(0.174)
Per capita income	0	0	0	0	0	0.000**	0	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Household head employed in public sector	0.009	0.009	0.005	0.007	0.011	-0.001	0.017	0.027
	(0.011)	(0.010)	(0.010)	(0.009)	(0.071)	(0.074)	(0.072)	(0.075)
Gender of child if female	-0.037**	-0.033**	-0.035**	-0.031**	0.213***	0.224***	0.208***	0.222***
	(0.017)	(0.016)	(0.017)	(0.015)	(0.055)	(0.058)	(0.056)	(0.058)
Age of child	-0.006**	-0.005**	-0.005**	-0.005**	0.020***	0.021***	0.020***	0.021***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.006)	(0.006)	(0.006)	(0.006)
Highest education of child	-0.003	-0.002	-0.003	-0.002	0.031	0.037*	0.033*	0.037*
	(0.004)	(0.003)	(0.003)	(0.003)	(0.019)	(0.020)	(0.019)	(0.020)
Child is working	-0.02	-0.017	-0.021	-0.018	0.172***	0.186***	0.177***	0.188***
	(0.017)	(0.015)	(0.016)	(0.015)	(0.060)	(0.062)	(0.059)	(0.061)
Observations	460	460	460	460	499	499	499	499

Notes: *** p<0.01, ** p<0.05, * p<0.1 Standard errors in parentheses clustered by household. Additional regressors include: dummies for 5-year intervals of house purchase year, dummies for highest education level of household head (male respondent if married, female respondent if widowed), dummies for number of brothers and sisters, and community fixed effects. Unlike other regressions, these estimates include both resident and non-resident adult children.

Table 8. Effect of windfall and housing value on child characteristics

	Highest education level of child				Age of child			
Windfall			0.027	0.043			-0.037**	-0.166***
			(0.019)	(0.094)			(0.018)	(0.062)
Windfall squared				0				0.004**
				(0.003)				(0.002)
Housing value	0.021	0.046			-0.007	0.008		
	(0.014)	(0.045)			(0.011)	(0.034)		
Housing value squared		0				0		
		(0.001)				(0.001)		
Non-housing assets	0.018***	0.006	0.017***	0.002	-0.003	-0.005	-0.003	-0.001
	(0.005)	(0.010)	(0.005)	(0.011)	(0.005)	(0.013)	(0.005)	(0.013)
Non-housing assets squared		0		0		0		0
		(0.000)		(0.000)		(0.000)		(0.000)
Respondent is married	-0.668	-0.656	-0.645	-0.634	-1.464***	-1.460***	-1.425***	-1.412***
	(0.494)	(0.495)	(0.493)	(0.504)	(0.388)	(0.387)	(0.386)	(0.379)
Household size	0.18	0.173	0.185	0.165	-0.031	-0.031	-0.038	-0.023
	(0.123)	(0.128)	(0.121)	(0.125)	(0.127)	(0.135)	(0.126)	(0.130)
Age of household head	0.027	0.028	0.016	0.02	0.867***	0.866***	0.874***	0.918***
	(0.174)	(0.174)	(0.174)	(0.173)	(0.186)	(0.187)	(0.184)	(0.183)
Age of head squared	0	0	0	0	-0.004***	-0.004***	-0.004***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Number of non-adult children	-0.257	-0.228	-0.346	-0.305	-0.088	-0.077	-0.044	0.009
	(1.070)	(1.066)	(1.085)	(1.094)	(0.653)	(0.656)	(0.649)	(0.676)
Per capita household income	0	0	0	0	0	0	0	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Household head employed in public sector	0.273	0.239	0.246	0.24	0.028	0.013	0.044	0.066
	(0.304)	(0.316)	(0.308)	(0.310)	(0.302)	(0.306)	(0.301)	(0.302)
Child lives outside local area	-0.062	-0.058	-0.032	-0.022	0.166	0.162	0.154	0.161
	(0.249)	(0.249)	(0.249)	(0.251)	(0.248)	(0.248)	(0.246)	(0.243)
Child is female = 1	0.008	-0.008	0.039	0.028	0.044	0.041	0.022	-0.003
	(0.250)	(0.252)	(0.254)	(0.260)	(0.228)	(0.228)	(0.225)	(0.222)
Observations	423	423	423	423	423	423	423	423

Notes: *** p<0.01, ** p<0.05, * p<0.1 Standard errors in parentheses clustered by household. Additional regressors include: dummies for 5-year intervals of house purchase year, dummies for highest education level of household head (male respondent if married, female respondent if widowed), dummies for number of brothers and sisters, and community fixed effects.