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Intergenerational financial support for homeownership and co-residence in Chinese cities

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Abstract: Drawing on questionnaire data from six cities in China, this study explores the relationship between intergenerational financial support from parents in adult children's housing purchases and key life course facts. The regression results indicate an inverted 'U'-shaped relationship between the age of young adults and the occurrence of financial support from their parents in housing purchases. Intergenerational co-residence, popular in China, is significantly and positively associated with financial support from parents for housing purchases. This suggests that many Chinese parents seek to achieve further intergenerational reciprocity through co-residence after giving financial support to their adult children. Interestingly, the regression results on samples without loans show that intergenerational co-residence is not significantly related to occurrences of parental financial support in housing purchases. This indicates that more affluent families purchasing housing without loans may not need to engage in intergenerational reciprocity through intergenerational co-residence. This paper provides new empirical evidence of intergeneration wealth transfers on homeownership in the context of China. It enriches our understanding of the relationship between intergenerational financial support for homeownership and the phenomenon of co-residence.

Keywords: purchase of housing; intergenerational transfer of wealth; intergenerational life course; intergenerational co-residence

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1 Introduction

Young adult children’s homeownership is commonly derived from intergenerational financial transfers across various societies (Albertini et al., 2018; Köppe, 2018; Mu et al., 2021; Or, 2018; Ronald & Lennartz, 2018; Song & Qi, 2011). For instance, in Western countries, the term ‘Bank of Mum and Dad’ indicates that young adult children are provided financial support from their parents to buy a home (Howker & Malik, 2013). Recently, skyrocketing housing prices have constrained young adults’ access to homeownership and further resulted in a situation in which the chances of survival and development of young adults are challenged (Cui et al., 2020; Zhu et al., 2022). Parents’ intergenerational financial support is increasingly vital in young adult children’s homeownership (McKee, 2012). Therefore, parents make more efforts to assist their children with entry into homeownership (Cui et al., 2020; Ronald & Lennartz, 2018; Zhu et al., 2022). Purchasing housing with parents’ financial support is a downwards intergenerational wealth transfer, and existing research has explained the phenomenon by altruism and exchange motivation (Cigdem & Whelan, 2017).

Purchasing housing with parents’ financial transfers tends to be associated with crucial life courses, such as age and marriage of young adult children, fertility choice of the young couple, and attending to the needs of elder parents, which are related to altruism and exchange motivation (Arundel & Lennartz, 2017). For instance, the age of achieving homeownership for adult children in China is increasingly younger (Mu et al., 2021), while a considerable proportion of them receive parental financial support in buying a home (Wu, 2017). In China, the notion of “six parents’ wallets” (*liu ge qian bao*) refers to young partners purchasing housing with financial support from parents and parents-in-law. Intergeneration wealth transfer can significantly reinforce the formation of a new family (Beer et al., 2011), as young adults can be more competitive in the marriage market if they own a home (Wei et al., 2017). The traditional consciousness, such as ‘purchasing housing for attracting a mate’ (*zhu chao yin feng*) and the requirement of homeownership from the mother-in-law (*zhang mu niang jing ji*), make young adults’ entry into homeownership a necessity in the

marriage market (Cheung et al., 2020; Mu et al., 2021). Thus, elder parents are expected to provide financial support for their adult children for housing purchases to encourage marriage (Forrest & Izuhara, 2012).

The intergenerational wealth transfer for housing has become widespread in China due to the skyrocketing housing prices caused by housing privatization, marketization and financialization (Cui et al., 2020; Forrest & Izuhara, 2012; Wu et al., 2020; Zhu et al., 2022). Interestingly, intergenerational wealth transfers for housing in China are more often in the form of money transfers directly from parents to their adult children rather than adult children living in their parental homes, as is common in Western countries and Japan (Coulter, 2018; Heath, 2018; Köppe, 2018). For instance, co-residence as an intergenerational support strategy was provided from parents to their children in Southern Europe (Albertini & Kohli, 2013), and few financial support ‘flow out of the wall of the parental home’ (Albertini et al., 2018).

In fact, it is widely observed in China that elder parents choose to move into their adult children’s homes after their children purchase housing with parental financial support (Li & Shin, 2013). The relationship between co-residence and intergenerational wealth transfer for housing is embedded in China’s cultural context. In China, strong mutual reliance and support exist between parents and their adult children (Forrest & Izuhara, 2012). It is well accepted by elder parents and expected by young adults that the elder parents will provide financial support for children’s acquiring homeownership. Furthermore, it is quite common that elder parents in China help their adult children look after their grandchildren in the way of co-residence, in which the elder parents move into adult children’s homes. As a return, adult children are supposed to take more responsibilities in caring for their old-age parents when living together. Therefore, intergenerational co-residence in China usually occurs after young adults’ new housing is purchased with financial support from their parents. Despite the increasing research on this phenomenon in China (Or, 2018), little quantitative research has investigated how the life course and its relevant facts, such as intergenerational co-residence, are related to home purchasing with intergenerational financial support.

Based on a large questionnaire dataset on individual housing consumption in six Chinese cities, this study seeks to fill this research gap and will pay particular attention to two life course facts: the age of adult children and intergenerational co-residence. The quantitative analysis divides the sample into two parts: the subsamples of the purchase of housing with loans and those without. The regression results indicate an inverted ‘U’-shaped relationship between the age of young adults and the occurrence of financial support from their parents for housing purchases. Intergenerational co-residence, popular in China, is significantly and positively associated with the event of financial support from parents for housing purchases. This suggests that many Chinese parents seek to achieve further intergenerational reciprocity through intergenerational co-residence after they give financial support to their adult children. Interestingly, the regression results from the subsample

without loans show that intergenerational co-residence is not significantly related to occurrences of parental financial support in housing purchases. This indicates that wealthier families purchasing housing without loans may not need to engage in intergenerational reciprocity through intergenerational co-residence.

2 Literature review

2.1 Intergenerational wealth transfer of housing

The intergenerational wealth transfer of housing takes place in many countries. For instance, a study in the UK estimated that more than 25% of young housing purchasers attained homeownership through parental financial support (Ronald & Lennartz, 2018). Similarly, 19% of the young generation in Japan received assistance from parents for housing purchases (Köppe, 2018). Purchasing housing with family financial support in Mediterranean societies is ubiquitous and could be regarded as a 'norm' (Albertini et al., 2018). In China, 58.1% and 38.6% of the young generation in Shanghai and Guangzhou purchased housing with family financial support (Li, 2010). In some cases, parents offer their housing as collateral for the children's mortgage (Helderman & Mulder, 2007), which helps the children obtain a formal bank loan (Köppe, 2018). The universal phenomenon of purchasing housing with intergenerational financial support is attributed to the continuously rising housing price, which was associated with the intensified commodification of housing property (Aalbers & Christophers, 2014). Young adults may not have the economic capability to purchase housing without family support (Köppe, 2018), and thus, intergenerational financial support has become essential (Gulbrandsen & Langsether, 2003).

Intergenerational support in homeownership could be largely attributed to altruism and exchange motives (Kohli & Künemund, 2003). According to altruism, parents would respond to their children's needs and provide them with the same or much better opportunities than they had (Lennartz & Helbrecht, 2018). The young adults who receive intergenerational transfers may shorten the time of entry into homeownership (Coulter, 2018). With financial support from their parents, young adults who achieve homeownership might have better socioeconomic conditions and could be more competitive in entering into marriage (Cui et al., 2020).

The exchange motive emphasizes the expectation of later compensation from their adult children (Kotlikoff & Morris, 1989). In this regard, intergenerational support is based on reciprocity. If the parental financial support for buying a home was seen as a gift, it must be reciprocated in a different form (Druta & Ronald, 2018) which might be a reciprocal flow of service and care from their adult children (Or, 2018). Parental financial support is important in sustaining children's independence and their long-term capacity to reciprocate with parental assistance (Rowlingson et al., 2017). In China, it is found that intergenerational transfers of housing wealth were motivated by the strategic exchanges of parents who were expected to obtain support in their old age (Cui et al., 2020; Wang & Liang, 2011). In addition, parental financial support is critical for sustaining intergenerational

emotional communication and cohesion (Zhong & Li, 2017). In short, there could exist ‘intergenerational contract’ between the adult children as the financial receiver and their parents (Croll, 2006), and the adult children pledge to fulfill their filial obligations by providing care for elderly parents (Deng et al., 2020; Or, 2018).

2.2 Life course and intergenerational wealth transfer in housing

Life course theory perceives that family life events have a long-term influence on later life conditions and behaviour (Herbers et al., 2014; Kohli, 2007). In particular, attaining homeownership through parental support has become critical in intergenerational contracts, particularly in ensuring smooth life course transitions across generations (Ronald & Lennartz, 2018). In this study, we pay attention to the role of two key life course factors, including the age of adult children and intergenerational co-residence, in affecting intergenerational housing transfers in China.

First, the age of young adult children is considered crucial in determining parental financial support for buying a home, while existing studies have controversial findings. Some studies have found that the probability of intergenerational financial support decreases with the age of adult children (Isengard et al., 2018). Younger children were more likely to be confronted with the constraints of bank mortgages in purchasing housing owing to their having less working experience. Thus, intergenerational financial support is more important for them. In addition, younger children whose parents are more likely to have better health may acquire more intergeneration financial transfers (Iwata & Yukutake, 2013). However, other studies found that adult children’s age and the intergenerational transfers of housing wealth present a nonlinear or curvilinear relationship (Helderman & Mulder, 2007; Wang & Murie, 2000). Earlier research in China reported that young people who were born in the 1980s and 1990s were receiving intergenerational transfers of housing wealth (Zhu, 2012), and one recent study found that young people born during 1980 and 1996 in China attained more intergenerational transfers of housing wealth (Zhang & Bian, 2021). However, little evidence is known about the relationship between the age of adult children and the occurrence of an intergenerational transfer of housing wealth in China. We hypothesize that an inverted ‘U’-shaped relationship between the age of young adults and the occurrence of financial support from their parents in housing purchases in China (*age hypothesis*).

Second, intergenerational co-residence is closely related to intergenerational support for housing purchasing. In Western countries, the notion of intergenerational co-residence is that young adult children return to or postpone leaving their parents’ housing when they are unable to afford the living expense. Therefore, intergenerational co-residence is often considered as an alternative form of intergenerational support for less affluent and less educated children (Isengard et al., 2018; Le Blanc & Wolff, 2006) who had no capability to purchase housing. The so-called ‘feathered nest’ in Western countries indicates that parental housing is more attractive to adult children, so they would choose to move into or postpone leaving their parent’s homes (Albertini et al., 2018). For

instance, it is found that in the UK and Southern European countries young adult children return to their parent's homes when facing labour market uncertainties and stagnating disposable income (König, 2016). The key reason that some young generations return to 'feathered nest' is to save up for a deposit to obtain homeownership as soon as possible (Roberts et al., 2016). Due to the unbalanced exchanges between the parents and their adult children, the parents could exercise moral and home space controls over their children in the cases of co-residence (Albertini et al., 2018; Druta & Ronald, 2018; Heath & Calvert, 2013). It implies that the children have more responsibility towards their parents, and in particular, in the form of elderly care (Druta & Ronald, 2018).

However, the mainstream form of intergenerational co-residence in China in the past three decades is different from that in Western societies. It is common that their parents move into the children's new housing after the adult children having their homeownership, namely, 'new nest' (Forrest & Izuhara, 2012; Li & Shin, 2013; Or, 2018). Since the 'new nest' is usually purchased with financial support from their parents, the co-residence is often interpreted by theories of bilateral exchanges and reciprocity. On the one hand, young adult children who receive parental financial assistance while purchasing housing are prone to live close to their parents, maintaining frequent contact with them and feel obliged to reciprocate with them (Or, 2018). On the other hand, parents anticipate obtaining old-age care through intergenerational co-residence (Szydlík, 2008). Providing financial support for children to purchase a home is considered an effective way to build emotional bonds for future intergenerational co-residence (Zhong & Li, 2017). Nevertheless, little empirical evidence shows the relationship between intergenerational co-residence and intergenerational financial support for housing purchases in China. In this study, we hypothesize that the intergenerational co-residence is positively related to the financial support from parents for housing purchases (*new nest hypothesis*).

3 Data and Method

3.1 Data source

The data used in this study are drawn from the 2017 Housing Survey of Chinese Cities, including Shanghai, Shenzhen, Xi'an, Chengdu, Tianjin, and Nanjing. The targeted respondents of the survey were recruited randomly from the crowd at the Housing Provident Fund Administrative Department in these six cities. The questionnaires were designed to investigate the family housing condition, housing finance, and so on, in these selected cities. Given the way in which the samples were chosen in this study, the respondents were supposed to use housing provident fund either through a loan or withdrawal for housing related expenses.

In total, 3,090 questionnaires were collected, including 526 in Shanghai, 517 in Tianjin, 510 in Nanjing, 512 in Chengdu, 510 in Shenzhen, and 515 in Xi'an. To better fit the theme of this research, those respondents who purchased housing in the local city after the year 2000 and were born between 1970 and 1999 were kept in the sample. After deleting those samples with incomplete information, we have the final samples consisting of 1,723 respondents which were comprised of 162 respondents in Shanghai, 395 in Tianjin, 336 in Nanjing, 352 in Chengdu, 132 in Shenzhen,

and 346 in Xi'an. Furthermore, we distinguish between respondents who purchase housing with loans and without loans, as these two groups of people confront different financial situations when purchasing housing and thus the financial support from their parents might have different motivations and consequences. The subsample of respondents purchasing housing with loans contains 1,339 observations, and the other comprises 384 observations.

3.2 Model specification

To disentangle the effect of the life course, such as the age of young adult children, and the strategy of intergenerational co-residence on the intergenerational financial transfers for purchasing housing, we employ the logit model to reveal the process. The dependent variable of $Intergen_i$ is a dummy variable in the regression, which is coded as 1 if the young adult children purchase housing with financial assistance from the parents or parents-in-law at the time of acquiring homeownership, and otherwise 0.

There are two main independent variables in the equation, including the intergenerational co-residence and the age of the young adult children to characterize the life course facts. First, $Co-residence_i$ represents whether or not those respondents co-reside with their parents after buying a home. Second, $InAge_i$ represents the natural logarithm of the young adult children's age when they purchased the housing. To obtain the variable of the respondents' age of acquiring homeownership, we calculate it using the respondents' age at the moment of the interview and the year of purchasing housing. Meanwhile, we add the square of the age variable to test the nonlinear effect of the respondents' age of buying a home.

Additionally, Z_i refers to control variables, including *hukou* status (whether or not respondents possess urban *hukou*), *hukou* origin (whether or not respondents possess local *hukou*), Housing costs (as the natural logarithm of gross housing spending), Homeowners' individual income (as the natural logarithm of homeowners' individual income), Educational level (as the natural logarithm of the years of education) and city dummies.

$$Intergen_i = \alpha_1 * Co-residence_i + \alpha_2 * InAge_i + \alpha_3 * (InAge_i)^2 + \beta_1 Z_i + \varepsilon_i \quad (1)$$

3.3 Descriptive results

Table 1 presents some basic information of the respondents. The attributes of all samples and the subsample with loans and the subsample without loans are summarized. Approximately 72.4% of the respondents without loans have received intergenerational financial support compared to 42.2% of those with loans and 48.9% of all respondents. A total of 48.7% of the respondents in the subsample without loans choose to co-reside with their parents after receiving parental assistance in housing purchases. In comparison, the proportions of all respondents and the respondents in the subsample without loans are 35.7% and 32%. Furthermore, the average age of the respondents purchasing housing through parental financial support in all samples is 27. Whereas the ages of those in the subsample with loans and in the subsample without loans are 28 and 24 respectively, and the 4-year gap implies that young adult children from wealthier families who can afford the housing

purchase without loans can obtain homeownership earlier.

Table 1 Sample characteristics, percentages, averages

Variables	all samples	with loans	without loans
<i>Main dependent variable</i>			
Intergen	48.9%	42.2%	72.4%
<i>Main independent variables</i>			
Co-residence(ref. non co-residence)	35.7%	32.0%	48.7%
Age	27.24	28.13	24.13
<i>Controlling variables</i>			
<i>hukou</i> status (ref. rural)	85.8%	85.1%	88.3%
<i>hukou</i> origin (ref. non-local)	78.1%	76.6%	83.3%
Housing costs (RMB 100,000)	12	13	8.9
Homeowners' individual income (RMB 100,000)	1.5	1.5	1.5
Educational level	16.23	16.36	15.77

4 Stylized facts of housing purchase with parental support in Chinese cities

4.1 Time trend and city differences

Overall, the proportion of housing purchases with intergenerational transfers is considerably high as shown in Figure 1. The highest ratio is 66.67% in 2002, while the lowest is 40.94% in 2017. Overtime, the ratio has a trend of slight decrease. Figure 2 presents notable disparities in the rate of young adults purchasing housing with parental financial assistance among the six cities. More precisely, the highest ratio of purchasing housing with intergenerational financial support is 58.02% in Shanghai, while the smallest ratio was 34.85% in Shenzhen. The ratios are 53.57%, 49.72%, 49.71% and 44.56% in Nanjing, Chengdu, Xi'an and Tianjin, respectively.

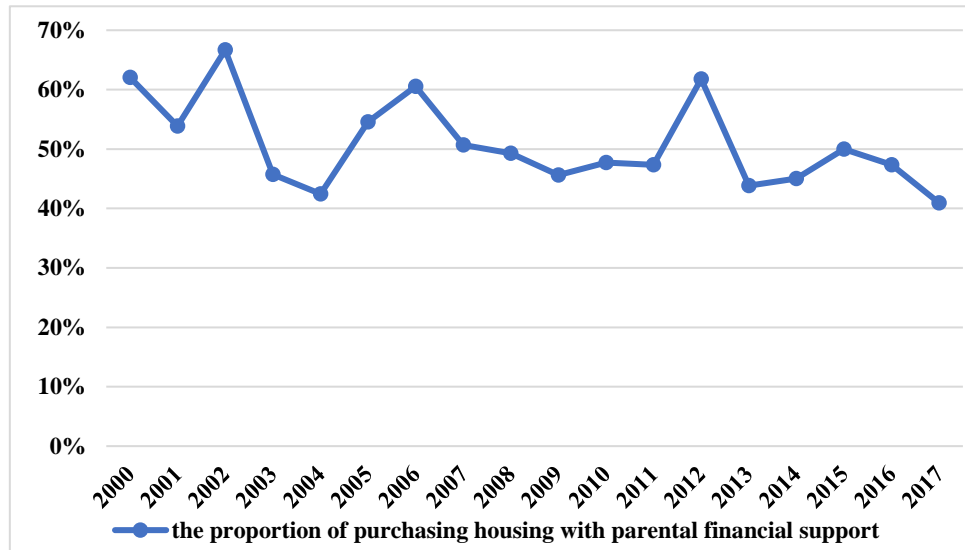


Figure 1 The proportions of housing purchased with parental financial support during 2000-2017

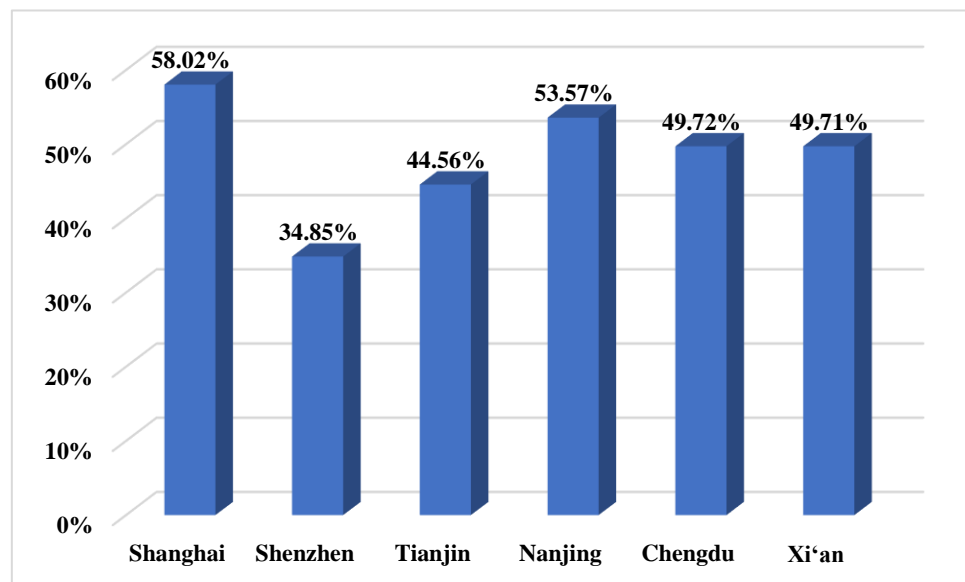


Figure 2 The proportions of housing purchased with parental financial support in six Chinese cities

4.2 Age distribution

The cohorts of young adult children purchasing housing with parental financial support were born mainly in the 1980s and 1990s, which is consistent with Christophers' findings (Christophers, 2018). In total, the proportions of respondents born in the 1970s, 1980s and 1990s are 19.44%, 62.62% and 17.93% respectively. In the three cohorts, 74.43% of the respondents born in the 1990s purchased housing with parental financial support. For those born in the 1980s, the ratio is 50.05%, and only 21.79% of those born in the 1970s obtained parental financial support in housing purchases. Interestingly, among all the respondents with parental support in housing purchase, 92 of them

entered into homeownership when they were 25 years old, which is the most populous age group, accounting for 10.91% of the total.

4.3 Intergenerational co-residence

The proportions of intergenerational co-residence in the first-tier cities are higher than the ratios in the second-tier cities in the sample. First, the proportions of young adult children who live with their parents in first-tier cities, including Shanghai and Shenzhen, are 58.51% and 56.52%, respectively, which indicates that young adult children in first-tier cities tend to relieve the pressure of overburdening living costs by living with their parents after they receive parental financial support for purchasing housing. Second, second-tier cities have relatively lower rates of intergenerational co-residence than first-tier cities, such as 42.22% in Nanjing, 41.14% in Chengdu, and 40.7% in Xi'an, followed by the lowest at 34.66% in Tianjin, which may be a consequence of the lower living costs in second-tier cities than in first-tier cities.

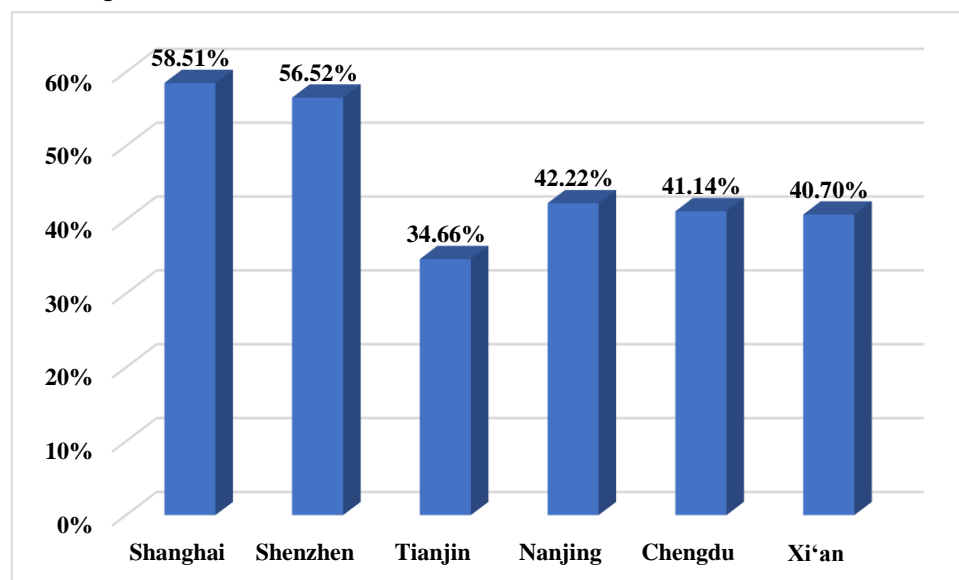


Figure 3 The ratios of intergenerational co-residence after receiving parental financial support in six cities

5 Regression results

We analyse the relationships between life course factors and parental financial support in housing purchases in China's context. Table 2 demonstrates the regression results of all samples. As mentioned previously, the sample is divided into two subsamples: purchasing housing with loans and without loans. We utilize logit models to do the regressions and Table 3 and Table 4 present the regression results of the two subsamples. In Table 2-5, Model 1, 5, 9 and 13 are the basic models only including the age of young adult children and intergenerational co-residence, while Model 2-4 and Model 6-8 and Model 10-12 and Model 14-16 have more controlling variables including *hukou* status, housing costs, educational level and et al.

5.1 Age

The results show that the adult children's age has a significant and positive impact on the probability of purchasing housing using intergenerational transfers, while the coefficients of the square of adult children's age are significantly negative. The results indicate that there exists an inverted 'U'-shaped relationship between the age of young adult children and the probability of purchasing housing with intergenerational financial support. The likelihood of young adult children purchasing housing with parental financial support would rise and then decline as the age of the young adult children increases, which is consistent with the findings in the literature on America and Australia (Cigdem & Whelan, 2017; King & McDonald, 1999; Schoeni, 1997). With age growing, young adults have less financial constraint but more pressures in marriage arrangements, thus parents are more willing to support their adult children in homeownership for the purpose of getting married in China. Therefore, young adults are more likely to purchase housing with parental financial support when they grow older.

However, as the adult children's age goes beyond a certain value, the adult children are less likely to receive financial support from their parents when they purchase housing, which echoes the finding of previous research (Isengard et al., 2018). This might be related to the situations of both parents and their adult children. On the one hand, when adult children are beyond a certain age, the adult children, who could be in the relatively stable economic and occupational situations in which they could accumulate considerable individual wealth, might have the financial capability to afford the most of housing costs. Meanwhile, as the age of the parents increases in parallel with the children, the older parents are less capable in providing financial support for their adult children for health issues or other reasons. On the other hand, when adult children grow older, their parents have fewer motivations to support their old kids for homeownership for marriage purposes and might turn to support their younger kids.

The relations still hold after we add the controlling variables, including *hukou* status, income and educational level, in Model 2-4 and Model 6-8 and Model 10-12.

Table 2 Regression results for all samples

Variables	Model 1	Model 2	Model 3	Model 4
Co-residence (ref. non co-residence)	0.391*** (3.47)	0.393*** (3.47)	0.344*** (2.98)	0.354*** (2.99)
Age	17.870*** (7.76)	17.557*** (7.81)	19.641*** (8.22)	19.654*** (8.26)
Square of Age	-3.465*** (-8.97)	-3.441*** (-9.11)	-3.742*** (-9.35)	-3.749*** (-9.40)

Housing costs (RMB 100,000)		0.069*	0.128***	0.132***
		(1.88)	(3.02)	(3.00)
<i>hukou</i> status (ref. rural)		0.186	0.094	0.119
		(1.12)	(0.54)	(0.68)
<i>hukou</i> origin (ref. non-local)		-0.113	-0.197	-0.237
		(-0.80)	(-1.36)	(-1.58)
Homeowners' individual income (RMB 100,000)			-0.029	-0.026
			(-0.93)	(-0.86)
Educational level			0.877*	0.937*
			(1.81)	(1.91)
Without loan (ref. with loan)			1.248***	1.242***
			(8.10)	(7.88)
City dummies (ref. Shanghai)	NO	NO	NO	YES
Constant	-21.324***	-21.564***	-28.175***	-28.196***
	(-6.21)	(-6.47)	(-7.47)	(-7.51)
Observations	1723	1723	1723	1723
Pseudo R2	0.137	0.139	0.170	0.176

Significance level: *p<0.1; **p<0.05; ***p<0.01

5.2 Co-residence

For all samples and the subsample with loans, Table 2 and Table 3 presents the regression results on the relationships between the co-residence and purchasing housing with parental financial support. The results indicate that intergenerational co-residence is positively related to intergenerational financial support for purchasing housing significantly. This could be explained by the reciprocity relationship between adult children and their parents in China's cultural context (Li & Shin, 2013).

When adult children face rising housing prices and the pressure of mortgages in large cities (Cui et al., 2020; Zhu et al., 2022), their parents are inclined to provide financial assistance to purchase housing. The parents usually use their savings (Isengard et al., 2018) or even raise money by selling their own houses (Forrest & Izuhara, 2012). In China, it is quite common that old parents sell their own properties to raise capital for their adult children's housing purchases. In return, adult children co-residing with their parents is a must or at least is a way to maintain close family emotional ties across generations. Furthermore, after the adult children have kids in the new-purchased housing, their parents are usually required to look after the grandchildren in many Chinese families. The intergenerational ties are further strengthened via co-residence. Simultaneously, the old parents would potentially obtain more old-age support in terms of emotional and health care in the future.

Conversely but interestingly, the relationship between intergenerational co-residence and

purchasing housing with financial support is not statistically significant in the subsample purchasing housing without loans. In this case, it seems the motivation of altruism (Mulder & Smits, 2013) fosters their parents' propensity to provide financial support for their children, and thus parents do not move into the adult children's 'new nest' for the purpose of intergenerational reciprocity. This could be true in China, as there is a strong tradition that parents have the responsibility to support their children, in particular, male children, in housing purchases, mainly for the purpose of marriage (Mu et al., 2021). The parents have a motivation of altruism to support their children to have the same or better-living circumstances (Ronald & Lennartz, 2018). Providing financial support for children's homeownership is not to obtain old-age care from their kids. In this case, the parents do not purposely engage in intergenerational reciprocity in the form of intergenerational co-residence (Forrest & Izuhara, 2012).

Since the family can afford the full payment of the new housing for the young adult children, we argue that wealthier families might not need to engage in intergenerational reciprocity via co-residence. Either the parents or the adult children have sufficient economic resources, they have alternative ways to deal with the health care for old parents and baby sitter issues. For instance, despite the higher living costs in large cities, the family can have another housing for old parents, who live independently (Forrest & Izuhara, 2012) and can afford to employ an experienced care worker at home. Furthermore, adult children have the capability to employ a professional babysitter to take care of grandchildren instead of relying upon intergenerational co-residence. Therefore, the relationship between intergenerational co-residence and purchasing housing with parental financial support is statistically insignificant in the subsample without loans.

Table 3 Regression results for subsample with loans

Variables	Model 5	Model 6	Model 7	Model 8
Co-residence (ref. non co-residence)	0.369*** (2.88)	0.373*** (2.90)	0.382*** (2.96)	0.410*** (3.11)
Age	19.154*** (4.18)	19.715*** (4.26)	19.505*** (4.15)	18.981*** (3.64)
Square of Age	-3.704*** (-5.06)	-3.813*** (-5.16)	-3.784*** (-5.03)	-3.714*** (-4.50)
Housing costs (RMB 100,000)		0.090 (1.33)	0.083 (1.23)	0.081 (1.13)
<i>hukou</i> status (ref. rural)		0.167 (0.88)	0.144 (0.75)	0.168 (0.86)
<i>hukou</i> origin (ref. non-local)		-0.057 (-0.35)	-0.091 (-0.55)	-0.151 (-0.89)

Homeowners' individual income (RMB 100,000)			-0.058 (-1.60)	-0.058* (-1.69)
Educational level			0.901 (1.63)	0.946* (1.68)
City dummies (ref. Shanghai)	NO	NO	NO	YES
Constant	-23.147*** (-3.22)	-25.136*** (-3.45)	-26.522*** (-3.52)	-25.459*** (-3.05)
Observations	1339	1339	1339	1339
Pseudo R2	0.122	0.124	0.127	0.137

Significance level: *p<0.1; **p<0.05; ***p<0.01

5.3 *Hukou* origin and other controlling variables

As illustrated in Table 2-4, the regression results for the variables housing costs, *hukou* origin, homeowners' individual income and educational level are statistically significant in some models. For all samples and the subsample without loans, the housing cost variable is positively associated with parental support in housing purchases in Model 2-4 and Model 10-12. This is not surprising, as adult children are more likely to seek for help from their parents if they buy more expensive housing.

The *hukou* origin variable is negatively related to parental financial support in housing purchases significantly in the subsample without loans, as shown in Model 10-12. This indicates that adult children with the local *hukou* are less likely to rely on their parent's support to obtain homeownership. In this case, the adult children with local *hukou* might have better economic conditions than those without.

For all samples and the subsample with loans, the educational level is positively associated with parental financial support in purchasing housing in Model 3-4 and Model 8, which shows that the adult children with higher degrees are more likely to need parental financial support in housing purchase.

Finally, in Model 8, for the subsample with loans, the income of adult children is negatively related to parental financial support in housing purchase significantly, which makes sense as adult children can less rely on their parents when they have better economic conditions. However, for the subsample without loans, the coefficients of individual income are positive, although not statistically significant.

Table 4 Regression results for subsample without loans

Variables	Model 9	Model 10	Model 11	Model 12
Co-residence (ref. non co-residence)	0.258 (1.01)	0.238 (0.89)	0.216 (0.81)	0.178 (0.65)
Age	17.019*** (5.21)	16.576*** (5.28)	16.530*** (5.05)	16.978*** (4.92)
Square of Age	-3.162*** (-5.58)	-3.153*** (-5.73)	-3.151*** (-5.52)	-3.236*** (-5.39)
Housing costs (RMB 100,000)		0.148*** (3.26)	0.143*** (3.11)	0.143*** (3.11)
<i>hukou</i> status (ref. rural)		-0.317 (-0.62)	-0.456 (-0.86)	-0.444 (-0.82)
<i>hukou</i> origin (ref. non-local)		-0.862** (-2.17)	-0.844** (-2.12)	-0.834* (-1.95)
Homeowners' individual income (RMB 100,000)			0.057 (1.07)	0.068 (1.36)
Education level			1.051 (1.02)	1.083 (0.99)
City dummies (ref. Shanghai)	NO	NO	NO	YES
Constant	-20.867*** (-4.49)	-20.369*** (-4.52)	-23.662*** (-4.45)	-24.111*** (-4.31)
Observations	384	384	384	384
Pseudo R2	0.125	0.164	0.169	0.180

Significance level: *p<0.1; **p<0.05; ***p<0.01

5.4 Robust check

To do the robust check, we further run the model only including respondents born in the 1980s and 1990s (see Table 5). The regression results are highly consistent with the main findings presented in Table 2 and Table 3. For the cohorts born in the 1980s and 1990s, co-residence is positively associated with purchasing housing with parental financial assistance significantly. Meanwhile, the relationship between the age of adult children and purchasing housing with parental financial support remains nonlinear. In addition, the adult children born in the 1980s and 1990s are more likely to rely on parental financial support when purchasing a house without loans.

Table 5 Regression results for the respondents born in the 1980s and 1990s

Variables	Model 13	Model 14	Model 15	Model 16
Co-residence (ref. non co-residence)	0.339*** (2.80)	0.343*** (2.82)	0.287** (2.31)	0.302** (2.39)
Age	18.731***	18.684***	19.869***	20.097***

	(6.80)	(6.89)	(7.14)	(7.23)
Square of Age	-3.610***	-3.626***	-3.745***	-3.788***
	(-7.66)	(-7.81)	(-7.84)	(-7.93)
Housing costs (RMB 100,000)		0.049	0.107**	0.107**
		(1.29)	(2.50)	(2.44)
<i>hukou</i> status (ref. rural)		0.249	0.207	0.222
		(1.45)	(1.15)	(1.23)
<i>hukou</i> origin (ref. non-local)		-0.110	-0.198	-0.242
		(-0.72)	(-1.28)	(-1.51)
Homeowners' individual income (RMB 100,000)			-0.020	-0.016
			(-0.60)	(-0.48)
Educational level			0.327	0.384
			(0.57)	(0.66)
Without loan (ref. with loan)			1.365***	1.364***
			(7.31)	(7.10)
City dummies (ref. Shanghai)	NO	NO	NO	YES
Constant	-22.509***	-22.965***	-27.139***	-27.394***
	(-5.62)	(-5.82)	(-6.25)	(-6.33)
Observations	1388	1388	1388	1388
Pseudo R2	0.099	0.101	0.133	0.140

Significance level: *p<0.1; **p<0.05; ***p<0.01

6 Conclusion and Discussion

Intergenerational transfers of housing wealth play an increasingly important role in obtaining homeownership for young adults (Mulder & Smits, 2013). Notably, in contemporary China, purchasing housing with parental financial transfers (*ken lao mai fang*) and immediately purchasing housing after graduation (*bi mai zu*) are widespread. Intergenerational financial support is crucial for adult children throughout the entire life course (Cheung et al., 2020; Mu et al., 2021). This paper provides new evidence that life course factors, in particular, intergenerational co-residence and the age of adult children, are related to the phenomenon of purchasing housing with parental financial support.

Our research finds that intergenerational reciprocity exists in the form of co-residence when adult children purchase housing with parental financial support in the fast urbanization period of China. Adult children acquire homeownership with parental financial support. Subsequently, the parents are more likely to move into the adult children's 'new nest' (Li & Shin, 2013) rather than adult children moving into the 'feathered nest' in Western countries. In contrast to previous research documenting that co-residence has little relation to parents' needs in Western countries (Albertini & Kohli, 2013), the reverse effect is found for this relationship in the Chinese culture of filial piety. In the 'new nest', the parents assist with their adult children's needs, such as caring for grandchildren.

Moreover, the co-residence in which parents move into the children's new house not only establishes the family's emotional ties and meets their children's needs but also potentially implies parental old-age care, so intergenerational reciprocity could be strengthened via co-residence. And reciprocal co-residence is common not only in the Chinese culture of filial piety but also in the filial tradition of the Asian region (Chang, 2021; Croll, 2006; Takagi & Silverstein, 2011; Yasuda et al., 2011). The findings provide new insights into co-residence and parental financial support in purchasing houses in China.

Moreover, this result indicates that the relationship between co-residence and purchasing housing with parental financial support might vary for families of different wealthy levels in China. When the adult children purchase housing without loans, the co-residence does not have attractiveness for the parents who provide the financial support for their children, which can be partly explained by the pure altruism motivation. At the same time, the families have sufficient economic resources for the parents to reside in the new city or other places independently and to employ an experienced care worker in their old age (Deng et al., 2020).

Our research confirms that there exists a nonlinear curvilinear relationship between the age of young adult children and the occurrence of purchasing housing with parental support, which is consistent with some existing studies (Helderman & Mulder, 2007). Younger adult children are more likely to be supported by parents within a certain age range, whereas the reverse results are found for the trend when the children exceed a certain age. While the previous study has found that the age of adult children is closely related to their acquiring homeownership in China (Mu et al., 2021), this research might advance our understanding of this by highlighting the timing of parental financial support for their adult children's homeownership is crucial.

Parents providing financial support for adult children's homeownership is so widespread in China, partly due to the speculative behaviour in the Chinese housing market. However, this is not sustainable. Financial institutions should develop financial housing instruments for the age-specific group and decrease mortgage rates, reducing the need for parental financial support (Iwata & Yukutake, 2013). Furthermore, establishing a uniform rental market in which securing rental housing is available for the young generation could relieve the parental pressure of financial support for adult children's homeownership (Cui et al., 2016).

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