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The Impact of Children's Gender on Family Housing Assets

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Abstract. China's household asset investment shows the characteristics of real estate concentration, which reduces the short-term risk-resistant ability of households and restricts the consumption ability of residents. This paper puts forward the theoretical hypothesis that "families whose eldest son is a boy have stronger housing investment motives". A probit model is constructed using data from CHFS2019 for empirical testing. The results find that households whose eldest son is a boy have a stronger propensity to invest in housing than households whose eldest son is a girl. The degree of local sex ratio imbalance and the risk attitude of the head of household also influence investment behavior.

Keywords: Family Housing Investment; Gender of First Child; Gender Imbalance.

1. Introduction

Since the reform and opening up, China's per capita income in both urban and rural areas has risen considerably, and in 2023, the per capita disposable income of China's residents had reached 39,218 yuan, an average increase of more than 20 times. However, it still faces the challenge of insufficient consumption by residents. This has gradually become an important influence on China's economic growth, and at the same time, in recent years, China's demographic contradictions have been intensifying, and the gender ratio of the birth population is particularly prominent. According to data from the Seventh National Population Census, China's total population sex ratio (the ratio of males to females with females as 100) is 105.07,and the sex ratio at birth is 111.3, still higher than the internationally recognized reasonable level of 103-107. A series of economic and social problems, such as the "marriage squeeze" phenomenon, will ensue as a result of the imbalance in the sex ratio at birth. Under the current policy background of constructing a domestic macro-cycle development pattern and restoring and expanding domestic demand, better guiding the rationalization of residents' household asset allocation is also one of the important means to promote consumption and expand domestic demand. To summarize, this paper will study the impact of the gender of family children on family housing investment, and deeply explore the potential mechanism of the gender of children on family housing investment.

Previous scholars have examined the factors influencing household asset allocation in terms of gender of the head of household, age, level of education, health, etc. Chamess and Gneezy (2012) use 15 different studies on investment risk-taking and combine them with the underlying investment game to conclude that women are more risk averse and less willing to invest in the stock market than men [1].Cardak and Wilkins (2009) using data from the Household, Income and Labor Dynamics Survey of Australia (HILDA) found that the level of risk preferences of individuals towards their families decreases with age [2]. Mankiwe (1991) found that the more educated individuals have higher ability to process information and therefore have more access to stock market information, participation in the stock market becomes less costly and the probability of participating in the stock market increases [3]. Yin, Zhichao, Song, Quanyun, and Wu, Yu (2014) find that a higher level of education is associated with a higher probability of investor participation in the financial market [4]. Wenchao Li (2022) argues that a high sex ratio affects the portfolio choice of households and finds that a one standard deviation increase in the sex ratio increases the stock market participation rate of households with sons relative to households with daughters by 2.9 percentage points [5]. In a study by Xueliang Lu and Yujie Ma (2021), using data from the 2017 Chinese Household Finance Survey, they find that

households with sons are more inclined to hold more than one housing unit relative to households with only daughters. As a result, households raising sons are more likely to crowd out investments in risky financial assets [6]. Wei and Zhang (2011) note that in the presence of gender imbalances, some households engage in “competitive saving” to increase their sons' competitiveness in the marriage market. Given that families' savings wealth is difficult to recognize directly in the marriage market, more and more families are choosing to demonstrate their strength and economic and social status by purchasing externally visible assets, such as housing [7]. Fang and Tian (2018) similarly find that housing is a major source of signals in China's marriage market, conveying men's qualities and traits, and that house size is negatively associated with the rate of male singleness rate is negatively correlated [8]. Yi, Chengdong, Ren, Jianyu, and Wang, Yourong (2018), using CFPS's 2014 urban data with OLS and Probit multiple regression models, find that families with children will have greater per capita housing space and multiple owner-occupied homes [9]. Clark's (1992) empirical analysis, based on data from the U.S., finds that families with multiple children of the opposite gender will have a significant increase in the number of rooms needed [10]. The contribution of this paper is to examine the impact of regional sex ratio imbalance on household housing investment from the perspective of gender imbalance, in order to demonstrate that the degree of competition in the marriage market influences the housing investment choices of individual households at the micro level, and to a certain extent to supplement the micro evidence of the theory of “competitive savings”. Secondly, by narrowing the choice of the research object to the single asset of housing investment, this paper takes fully into account the reality that the vast majority of Chinese households' assets are real estate.

2. Theoretical Mechanism Analysis

Men and women have unequal access to information channels when searching for an ideal spouse, and in order to this reduce information asymmetry for a more ideal match, women look for more objective and real perceptible information, as well as more channels to understand each other (Fang and Tian, 2018)[8]. Housing, as an object that can be directly perceived and as a symbol of wealth, objectively plays the role of signal display. In addition, due to the influence of the traditional Chinese cultural background, the ideology of “valuing sons over daughters” and “raising children to prevent old age” still has a profound impact, and the traditional concept of marriage drives the behavior of boys' families to invest in housing. Lu and Wu (2017) argue that Considering the future marital status of their sons, the risk attitude of families will change and reduce risk-taking behavior, thus reducing the behavior of investing in virtual high-risk financial assets such as stocks and funds [11].

The theoretical hypotheses proposed in this paper are as follows:

Hypothesis 1: In the context of gender imbalance, families with boys will increase their investment in family housing assets and will crowd out risky financial investments.

Hypothesis 2: The effect of differences in the gender of children on housing investment behavior is more pronounced the more severe the gender imbalance is and works through the risk attitudes of households.

3. Data and Models

3.1. Data and Variable Selection

The data in this paper are selected from the China Household Finance Survey (CHFS) project implemented by the China Household Finance Survey and Research Center of Southwestern University of Finance and Economics, and the microdata of CHFS 2019 is used as the basis of the study. In order to explore the impact of children's gender on housing investment, the CHFS questionnaire “Does your family have any intention to build a new home or purchase a new home?” was used with reference to Wei Xihai and Wan Jiangtao (2020)[12]. This question measures the impact on housing investment, “Does your household hold financial management products?” This

question measures the impact on financial products. In order to be able to minimize the endogeneity of the explanatory variables, the gender of the household's first-born child is selected for the study. Under the dual influence of the strong policy constraint of family planning policy and the traditional idea of "emphasizing boys over girls", the gender of children may be artificially manipulated. Ebenstein (2010) argues that the gender selection of Chinese families, in general, is not carried out on the first child, and the gender ratio of the first-born child is relatively close to the natural state of 1:1, close to the natural state of 1:1 [13], so we can assume that the sex of the first-born child is naturally determined, i.e., the sex of the first-born child is highly exogenous.

The information and descriptive statistics of the final selected variables are shown in Table 1

Table 1. Descriptive Statistics

Variable	Sample	Mean	Stand	Min	max
buyhousing	13,091	0.305	0.461	0	1
financepro	13,091	0.106	0.308	0	1
sexchilds	13,091	0.515	0.500	0	1
chlidcounts	13,091	1.633	0.708	1	7
head_ages	13,091	39.20	5.441	18	49
head_ages2	13,091	1,566	420.9	324	2,401
head_eduyear	13,091	11.32	3.579	0	16
head_hukou	13,091	0.514	0.500	0	1
worknums	13,091	1.868	0.692	1	6
riskpreference	13,091	0.507	0.688	0	2
startbusiness	13,091	0.141	0.348	0	1
income_per	13,091	28,549	10,553	17,286	64,183
net_asset	13,091	13.26	1.447	5.635	17.38
housing_price	13,091	9.060	0.431	8.526	10.44
houseinc_ratio	13,091	0.326	0.0801	0.196	0.592

3.2. Benchmark Model

$$buyhousing_i^* = \alpha + \beta sexchilds_i + \gamma Z_i + \mu_i + \varepsilon_i \quad (1)$$

$$buyhousing_i = \begin{cases} 1, if\ buyhousing_i^* < 0 \\ 0, otherwise \end{cases} \quad (2)$$

$$financepro_i^* = \alpha + \beta sexchild_i + \gamma Z_i + \mu_i + \varepsilon_i \quad (3)$$

$$financepro_i = \begin{cases} 1, if\ financepro_i^* < 0 \\ 0, otherwise \end{cases} \quad (4)$$

4. Empirical Results

4.1. Benchmark Regression

Table 2. Base Regression Results

	investment in housing assets	venture finance investments
whether the sex of the first child is male	0.070*** (2.93)	-0.146*** (-4.42)
constant	-0.716 (-0.70)	-10.200*** (-6.26)
province fixed effects	control	control
R^2	0.26	0.15

Note: t-values are in parentheses, *p<0.1, **p<0.05, ***p<0.01

The results, as shown in Table 2, show that gender differences in households' first-born children have a significant positive effect on investment in housing assets and a significant negative effect on investment in risky financial investments, which is mainly motivated by the fact that households with a male child will be more inclined to invest in less risky assets and increase their investment in

housing in order to improve their saving capacity and cash flow, and the results of this regression support theoretical hypothesis 1.

4.2. Robustness Check

The independent variable selected in this paper is the sex of the first child, referring to the studies of Bulte (2011)[14], Wei Xihai and Wan Jiangtao (2021)[12], this paper adopts the proportion of ethnic minority population in each region, the locals in ethnic minority areas are not subject to strict family planning policies, and the implementation of the policy fully respects the living habits and customs of the ethnic minorities, and there is a negative correlation between it and the local sex ratio, and the policy has been established for It is negatively related to the local sex ratio, and the policy has been established for many years, which will not have an impact on the investment decisions of the families now. The regression results are shown in Table 3, and the estimation results of IV test indicate that the baseline regression results of this paper are robust and reliable..

Table 3. Robustness Test Results

variable	Stage1	Stage2	Stage1	Stage2
percentage of ethnic minority population by region	-0.104*** (-3.33)		-0.085** (-2.38)	
sex of the first-born child		4.661*** (2.87)		5.121** (2.08)
remaining control variables	uncontrolled	uncontrolled	control	control
observed value	13,097	13,097	13,097	13,097
weak instrumental variable test (f-value)	11.10***		25.15***	

Note: t-values are in parentheses,*p<0.1,**p<0.05,***p<0.01

In addition, the paper conducts a series of endogeneity tests such as replacing the independent variables, excluding the sample of owner-occupied housing, and replacing the estimation method, etc., and the regression results are consistent with the baseline regression, indicating that the results of the paper are robust and reliable.

4.3. Mechanism Verification

In order to test the previous suggestion that intense competition in the marriage market leads to an increase in housing investment, this paper utilizes the regional sex ratio to measure the degree of gender imbalance, using the sex ratio of 10–19-year-olds and the sex of the first-born child as the interaction term for the explanatory variables, and housing investment as the explanatory variable, and the results of the regressions are shown in Table 4. The results illustrate the tendency of gender imbalance to exacerbate housing investment, validating this paper's Theoretical Hypothesis 2.

Table 4. Mechanism Verification

variable	Housing investment
interaction term between regional sex ratio and sex of first-born child	0.865** (2.03)
remaining control variables	control
province fixed effects	control
observed value	13,091

Note: t-values are in parentheses,*p<0.1,**p<0.05,***p<0.01

In addition, in order to test the theoretical mechanism analysis in the previous section, the paper compiles the gender ratio of 10–19-year-olds in the sample provinces, and the results significantly show that the higher the regional gender ratio, the lower the risk attitude of the head of the household in the region, the more conservative, and the tendency of investing in housing, and the results of this mechanism test are consistent with the support of the theoretical hypothesis 2.

4.4. Heterogeneity Analysis

This paper analyzes the heterogeneity of the sample into eastern, central, and western areas, urban and rural areas, the education level of different heads of households, and the gender of different heads of households, etc., and explores in more detail the differences in the impact of the gender of the children on housing investment, which will not be repeated due to space constraints.

5. Conclusion and Inspiration

The following conclusions can be drawn: households with a boy significantly increase household investment in housing assets and decrease household investment in risky finance relative to households with a girl. The mechanistic analysis finds that, first, the effect of the sex of the eldest child on housing investment works through the regional sex ratio, and it is found that the greater the gender imbalance, the stronger the willingness of the household to increase its housing investment. Second, this is realized through the risk attitude of the household head and varies across regions, household registration, education level and gender. Based on a novel perspective, this paper adds micro-evidence to the current home-buying frenzy that a high share of household housing assets reduces households' consumption capacity and risk resistance, which is not conducive to the expansion of domestic demand and sound forward movement of China's economy.

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