

# Study on The Influence of High Housing Price on Fertility Desire

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**Abstract:** In recent years, China's birth rate has been declining continuously, facing the challenge brought by population structure transformation. Nowadays, housing prices in cities are rising rapidly, while the cost of raising children is also very high, and the two important decisions of childbearing age people, housing and reproduction, occupy a lot of family resources. Therefore, this paper explores the impact of high housing prices on fertility desire and finds that high housing prices will have a negative impact on it. That is to say, high housing prices will "squeeze out" fertility desire. Based on this, this paper puts forward three suggestions: First, adhere to the principle of "houses are for living in and not for speculative investment" to improve residents' living space. Second, we will introduce measures to reduce the cost of childbirth and parenting to reduce the burden of childbirth. The third is to create a good social environment to stimulate the birth rate.

**Keywords:** High housing price; cost-of-upbringing; fertility desire.

## 1. Introduction

Sustainable population development is a basic condition for the realization of sustainable economic and social development. The sufficient labor force has been one of the main reasons for the rapid development of China, which is also called the demographic dividend. In recent years, the fertility rate of China's population has continued to decline. According to the National Bureau of Statistics released the 2022 National Economic and Social Development Statistics Bulletin, the national population at the end of 2022 was 141.175 million, which is 0.85 million fewer than at the end of the previous year. There were 9.56 million births in the year, with a birth rate of 6.77 per thousand; 10.41 million deaths, with a mortality rate of 7.37 per thousand; and a natural growth rate of -0.60 per thousand. Along with the decline in fertility comes population aging, demographic imbalance, and a reduction in the demographic dividend. The country's development will be seriously affected, even leading to a halt in the country's progress.

The government has introduced several policies to stimulate births in order to increase China's fertility rate, with the Population and Family Planning Law of the People's Republic of China coming into effect on January 1, 2016, and the "comprehensive two-child" policy being implemented nationwide. On July 20, 2021, the Central Committee of the Communist Party of China (CPC) and the State Council issued the "Decision on Optimizing the Fertility Policy and Promoting the Long-term Balanced Development of Population". On July 20, 2021, the CPC Central Committee and the State Council issued the "Decision on Optimizing Reproductive Policy and Promoting Long-term Balanced Development of Population," making a major decision to implement a three-child policy and supporting measures. However, judging from the data released by the National Bureau of Statistics in recent years, the two-child policy and

the three-child policy have not had any significant effect, and the fertility rate has always remained at a low level, with no obvious improvement. Compared with rural areas, the fertility rate in urban areas is even lower, probably due to low fertility desire caused by high housing prices. The main source of the problem of low fertility comes from the downward trend of fertility desire. Factors affecting fertility desire mainly include national population policy (Shen Mu, 2023), individual economic situation/employment level (Yang Xiaolei and Zhong Ruyu, 2023), family factors (Wu Zheng, 2022; Chen Xiwei, 2022), social security system (Yu Yong, and Yu Ming, 2022), urbanization (Guo Zhen et al., 2013; Go Yanxia, 2015), and so on. With soaring urban housing prices, many believe that high prices and housing space may affect fertility desire.

Currently, some scholars start to pay attention to the impact of the impact of housing and housing prices on fertility. Zhang Fen and Fang Yingfeng (2015) studied the mechanism of the influence of housing prices on the fertility decisions of Chinese families and analyzed the influence of housing prices, housing conditions and income on the fertility decisions of families. The study found that the influence of housing prices on family fertility decisions is realized through housing conditions and family income. Therefore, rising housing prices will deteriorate housing conditions and will also lead to a decrease in family income, thus reducing family fertility desire. Studies have shown that the impact of housing prices on Chinese families' fertility decisions is multifaceted, involving not only housing conditions but also factors such as family income. Liu Peiwen (2018) studied the impact of rising housing prices on the fertility desire of China's urban population and analyzed the factors affecting fertility desire. The study used questionnaires, descriptive systems, and personal interviews to survey residents of Nanjing and Zhenjiang cities in Jiangsu Province. The study found that rising housing prices negatively affect the fertility desire of urban residents, especially for families with poor housing

conditions. At the same time, factors such as family income, education level and employment status also have an impact on fertility desire. Among them, the effects of family income and education level on fertility desire are more significant. Li Zhilong et al. (2020) studied the impact of rising housing prices on married women's fertility using survey data from 2005 and 2010, and found that rising housing prices have a greater negative impact on most women's fertility desire, but there is a difference in the impact on married women's fertility desire for different characteristics: rising housing prices can increase the fertility desire of married women with a house, but reduce the fertility desire of women with a first child being a boy and women with a second child being a boy. The effect is different for married women with different characteristics: rising housing prices increase the fertility intention of married women with a house but decrease the fertility intention of women with one child being a boy. Li Xiaohe and Li Rui (2023) studied the impact of housing prices on women's fertility desire and analyzed the impact of rising housing prices on different women's fertility desire from multiple dimensions, such as whether women are agricultural households, whether they have property, type of job, age stage, etc. They confirmed that rising housing prices have a significant negative impact on women's fertility desire, and that controlling housing prices can alleviate the pressure on most women's house purchases, thus increasing the fertility rate. Combing through the literature, scholars have not formed a consistent research conclusion on this issue, while the theoretical analysis and empirical test need to be optimized.

Therefore, what is the impact of high housing prices on residents' fertility desire? If there is an impact, what is the imaging mechanism? This paper will focus on the impact of high housing prices on fertility desire, establish a theoretical analysis framework of the impact of high housing prices on fertility desire and put forward research hypotheses, and utilize micro-survey data to validate the hypotheses, with a view to clarifying the impact of high housing prices on fertility desire from the perspectives of housing costs and education costs.

The significance of this paper lies in the fact that under the situation of rising housing prices in China. The study of this issue can not only help to understand the current fertility concepts and fertility desire of different age groups through the survey and analysis, but also help to find more practical and feasible responses to enhance fertility desire from a realistic point of view, so as to promote the future economic development of the country as well as to maintain the balance of the population in the new era.

## 2. Theoretical Analysis and Hypothesis

This study proposes that high housing prices (X) impact fertility desire (Y) in two main ways: directly and indirectly.

**Direct Impact:** For every household, the total family income remains relatively stable. Residents allocate this total income among various expenses. Housing and childbearing are significant expenditures for families. Thus, when a family spends a substantial amount of money on housing, the

resources available for childbirth or child-rearing are squeezed. This means that high housing prices elevate living costs. Due to increased expenses in buying a house and mortgage loans, it may be challenging for families to bear the costs of child-rearing and education. This subsequently reduces fertility rates. Therefore, we believe that high housing prices have a direct negative effect on fertility desire; that is, high housing prices decrease residents' willingness to have children.

**Indirect Impact** encompasses: Many young people today prefer to own property before getting married. However, high housing prices delay the time it takes for people to start families. As women's fertility is influenced by age, couples marrying late are more likely to experience lower birth rates.

High housing prices might impose psychological stress on individuals, indirectly leading to anxieties about childbearing costs and reduced fertility rates. Most people consider childbearing only after they are settled in life. Facing high housing prices, many young individuals focus their energy on making ends meet and saving to buy a house. This situation possibly makes them apprehensive and uncertain about their future, influencing their decisions on whether and when to have children.

If a family has more children, the need for living space and future housing expenses for their children also increase. High housing prices mean that many people can only afford small homes or those in remote areas. A cramped living space might discourage individuals from having children, especially a second child. In contrast, the typically poorer educational resources in remote areas may also lower birth rates. High housing prices can result in unsatisfactory living conditions, making it challenging to offer children a conducive growing environment. It affects a couple's childbearing decisions.

It's worth noting that a tiny minority in society owns numerous properties. As housing prices rise, the total assets of this group also increase, potentially boosting their willingness to have children. However, since this group is minimal, it is not particularly representative. Thus, we believe the impact of high housing prices on fertility desire is negative, meaning the higher the housing prices, the lower the fertility desire.

Based on this, the study proposes the following hypothesis: High housing prices have a negative effect on fertility desire. In other words, high housing prices "squeeze out" the willingness to have children.

## 3. Empirical Verification

### 3.1. Sources

In order to gain insights into individuals' fertility desire and housing prices in the real world, we meticulously designed a research questionnaire. Employing social media platforms and the online survey tool "Question Star," we distributed the survey and successfully collected a total of 134 valid responses. The questionnaire majorly encompassed a range of inquiries, including personal demographics, household characteristics, fertility desire, housing prices, and other variables impacting fertility desire. Below, we introduce a concise overview of the sample's characteristics.

Graph 3-1 Sample Characteristics

	Section	Frequency (individual)	Frequency (%)
Gender	Male	41	30.60
	Female	93	69.40
Age	Below 26 years old	3	2.24
	26-35 years old	31	23.13
	36-45 years old	66	49.25
	Above 45 years old	34	25.37
Marriage	Married	117	87.31
	Unmarried	14	10.45
	Divorced	3	2.24
Education Level	Equal and below junior high school	2	1.49
	High school	16	11.94
	Undergraduate	62	46.27
	Graduate and Above	54	40.3
	Employees of enterprises Staff of government institutions and public organizations	83	61.94
Occupation	Self-employed	6	4.48
	Freelancers	8	5.97
	Unemployed or full-time homemaker	2	1.49
	Others	20	14.93
	Below 5000 CNY	19	14.18
Monthly Family Income	5000-8000 CNY	16	11.94
	8001-11000 CNY	21	15.67
	Above 11000 CNY	78	58.21

Graph 3-2 Conclusion of Regression Coefficients

	(1) Fertility Intention	(2) Fertility Intention	(3) Fertility Intention
If CNY/Month for Rent	-0.004** (0.002)		
If CNY/Month for mortgage payment		-0.011** (0.006)	
Respondent Gender	0.240* (0.132)	0.239* (0.132)	0.220* (0.117)
Respondent Age	0.028*** (0.010)	0.033*** (0.011)	0.029*** (0.009)
Respondent Marriage	-0.633*** (0.168)	-0.634*** (0.189)	-0.505*** (0.138)
Respondent Education Level	0.033 (0.121)	0.072 (0.139)	-0.082 (0.095)
Respondent does not have a sibling	0.048 (0.127)	0.125 (0.123)	-0.076 (0.110)
Respondent Monthly Income	0.023 (0.068)	0.056 (0.069)	0.064 (0.060)
Respondent Occupation	0.057 (0.040)	0.060 (0.040)	0.066* (0.035)
Medical Insurance for Parents	0.159 (0.161)	0.201 (0.177)	0.069 (0.154)
Retirement Insurance for Parents	-0.033 (0.159)	-0.228 (0.164)	-0.088 (0.133)
Maternity Insurance for Parents	-0.132 (0.100)	-0.088 (0.106)	-0.076 (0.090)
The Parents of both spouses	0.106 (0.140)	-0.006 (0.142)	-0.029 (0.118)
City where Respondent is living	-0.032 (0.038)	-0.030 (0.037)	-0.007 (0.031)
_cons	-0.072 (0.703)	-0.186 (0.802)	0.774 (0.654)
Observations	85	106	134
R-squared	0.473	0.360	0.339

Standard errors are in parentheses, \*\*\* p&lt;.01, \*\* p&lt;.05, \* p&lt;.1

### 3.2. Model Specification

To examine the impact of housing prices on fertility desire, this verification establishes a multiple linear regression equation as follows:

$$Y = \beta_{\text{HouseP}} + \beta_1 \text{male} + \beta_2 \text{age} + \beta_3 \text{marriage} + \dots + e \quad (1)$$

In Equation (1), Y represents fertility desire, HouseP represents housing prices, male represents gender, e represents the error term, and  $\beta$  represents the regression coefficients. The coefficients  $\beta_1$ - $\beta_3$  symbolizes the regression coefficients of control variables such as gender, age, marriage, occupation, and so forth.

### 3.3. Result of Regression Coefficients

From Table 3-2, it can be observed that the regression coefficient for rental housing rent on fertility desire is -0.004 and is statistically significant at the 5% level. The regression coefficient for mortgage loans on fertility desire is -0.011 and is as well statistically significant at the 5% level. This indicates that as housing prices increase, fertility desire decrease. The research hypothesis has been confirmed.

### 3.4. Conclusion

Based on the design of the questionnaire, data collection through its distribution, descriptive statistical analysis, and the establishment of a multiple linear regression model to validate the research hypothesis, this study confirmed the negative impact of high housing prices on fertility desire. Consequently, in order to enhance fertility desire, we proposes strategic recommendations from the perspective of top-level institutional design and development.

## 4. Proposals for Countermeasures

Fertility issues are related to the stability of the demographic structure and the healthy development of the economy and society, and it is necessary to reverse the declining trend in the fertility rate in a timely manner in order to avoid causing deeper harm to economic and social development.

### 4.1. Adhere to the principle of "housing without speculation" and improve residents' living space.

The State and relevant government departments need to introduce a series of measures to firmly implement the principle of "housing without speculation". They should establish and improve housing statistics and information databases, strengthen analysis and judgment, and offer preferential housing and credit terms for the first suite. For example, lowering the down payment ratio and lending rates for the first suite, lowering the threshold and cost of home ownership, and increasing residents' willingness to purchase homes and their liquidity. The government has given policy support, giving full play to the role of market mechanisms, guiding multi-principal investment and multi-channel supply of urban guaranteed housing, and providing guaranteed housing supply to eligible residents, including mainly groups such as eligible new citizens, young people, and various types of talents, as well as front-line workers who provide basic public services to society. Clearly define the size standards for

guaranteed housing and implement differentiated rental and sale prices. Support corresponding infrastructure, improve schooling, medical care, transportation, pension and other related ancillary services to meet the living needs of residents, and enhance the sense of well-being of residents living in guaranteed housing. Strengthen market management, regulate the price of supply and demand in the property market, and prevent inflated housing prices.

### 4.2. Supporting the introduction of measures to reduce the costs of childbirth and parenting, and alleviating the burden of childbirth.

The high cost of childbirth and parenting is an important factor hindering childbearing. Therefore, taking multiple measures to reduce the cost of childbearing is an important way to increase the willingness to give birth. Increase the subsidies for childbearing families, for example, by giving a certain amount of maternity subsidy to families with one child, and a higher maternity subsidy to families with two, three or more children. Reduce the cost of child-rearing and continue to improve the accessibility and perceived value of the policy, so as to boost confidence in childbearing by further reducing the corresponding burden. Strengthen the cultivation and standardization of talents in such industries as sister-in-laws and child-care workers, and further improve the quality of the industry, so as to provide families with more support and assistance in raising children. Increase national and social support for the love and care of young children from the kindergarten stage, and further improve nine-year compulsory education. Fully mobilize the government, society, communities, schools and enterprises to exert social synergy, for example, the government should strengthen the construction of barrier-free facilities and mother-and-child rooms, and enterprises should raise their awareness of social responsibility, alleviate discrimination against women's childbearing, and support women of childbearing age on the basis of maternity leave and other aspects. Incorporate infant and child care services into basic public services, and vigorously develop diversified and diversified inclusive child care services to meet the needs of different families, so as to reduce pressure for young parents on many fronts and relieve them of their worries about childbirth.

### 4.3. Create a favorable social environment to stimulate fertility.

Fertility is a personal or family choice, but it is related to the long-term development of the country. Therefore, we should create a favorable social environment to encourage fertility and enhance the social willingness to give birth. We should vigorously promote the traditional virtues of the Chinese nation, establish the value concept of respecting childbirth, create a good culture of respecting childbirth, advocate age-appropriate marriage and childbearing, optimal childbearing, encourage couples to share the responsibility of childbearing, and eliminate stereotypes such as high-priced dowry to build a new type of marriage and childbearing culture. It is necessary to improve the system of maternity leave, and strictly implement the system of maternity leave and breastfeeding leave. We are exploring the conversion of maternity leave into paid parental leave, encouraging the distribution of parental leave between spouses, and guiding

couples to share parental leave. Explicitly advocate strengthening men's sense of responsibility and participation in childcare, and alleviating the burden of childbearing and childrearing on women. Strengthening the design of employment systems to ease the pressure of competition in the job market, so that young parents can better balance the burdens of work and family, especially as women are vulnerable to "motherhood penalties" in the job market, and establish a climate of respect for childbearing in society as a whole, so as to give full play to the positive role of policies in promoting childbearing.

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