Under Pressure: How Do Housing Prices and Income Affect Birth Preference in China

Nianjia Yang[1,a,*]

[1]*Beijing 101 Middle school, Yi He Yuan Road No.11, CHINA*
a. yangnianjia20050403@gmail.com
*corresponding author

Abstract: With a declining demographic trend nowadays, China is facing a critical challenge in pursuing economic growth. Previous literature has discussed that housing pressure and individual income are the main factors influencing fertility choices in contemporary society. However, very few have focused on how housing markets and income influence fertility behaviors under the specific situation that China faces. In this study, by conducting fixed-effect models, I use datasets from the CGSS survey and the NBS to investigate how housing prices and personal income affect birth preference in China. Results show that wealthier individuals prefer fewer children, and that people are less willing to have children when local housing prices become higher. Regional models show that the correlation between housing prices and birth preference is higher in cities where housing prices are high. Models based on gender differences show that females tend to be more focused on income, while males are more responsive to housing prices. Also, quadratic analysis shows that there is a U-shaped relationship between income and birth preference, which shows a decreasing trend until income is about 280,000 RMB (43,800 USD).

Keywords: Birth Preference, Housing Prices, Income, China.

1. Introduction

The aging population and low fertility rates have been an increasingly severe social problem and hinder economic growth in numerous advanced industrial countries such as Germany, Finland, Japan, and Italy. In China, one of the world's largest developing and the most populous country, the lack of labor forces is particularly urgent and hard to resolve [1]. The pressing issue of low fertility rates in China has already urged policymakers and politicians to raise their awareness of this problem. After replacing the one-child policy with the two-child policy in 2016 and then with the tree-child policy in 2021, the birth rates in China still remain subdued (Figure 1). The low fertility rates are directly related to the aging population in China [2]. This trend contributes to declining demographic dividends, on which China's development in the 20th century relies [3]. Thus, investigating the potential causes of declining fertility rates in China in the 21st century is a crucial task waiting to be overcome to assist the policy-making process, so that policymakers and politicians could bolster the economic condition in China again.

Numerous literature has investigated how housing prices and income would affect fertility behaviors. Notwithstanding, little is done to the specific condition in the 21st century China, which has exorbitant housing prices and unbalanced income in many regions. This paper, however, not only

examines how fertility willingness is influenced by housing prices and income but also shows differences across regions and genders, enabling policymakers to implement more precise policies on specific people groups to rise the fertility rates in China.

In this paper, I examine how housing prices and income, both of which account for the individual financial condition, affect people's willingness of giving birth in China. I combine multiple years of cross-sectional data from CGSS for one dependent variable housing prices, the independent variable birth preference, and other controlled variables that could exert great influence on fertility behaviors. Also, I retrieve data from NBS for other independent housing prices across provinces.

Using fixed effects models, I show that the relationship between housing prices and birth preference is highly dependent on different regions. The Eastern region, where housing prices are higher than other regions, shows a significant negative relationship between housing prices and birth preference, whereas other regions do not have an apparent correlation between these two variables. In any region, income is also negatively related to birth preference, but the correlation significance varies across regions, which is also the most significant in the eastern region. The subset data analysis shows that females are generally more concerned with income but less concerned with housing prices, which may be an important gender difference that policymakers should consider when encouraging families to give more births. To address the concern of a nonlinear relationship between variables, quadratic analysis shows that there is a strong U-shape relationship between income and birth preference. Individuals with an annual income of approximately 280,000 RMB (43,800 USD) tend to give the fewest births.
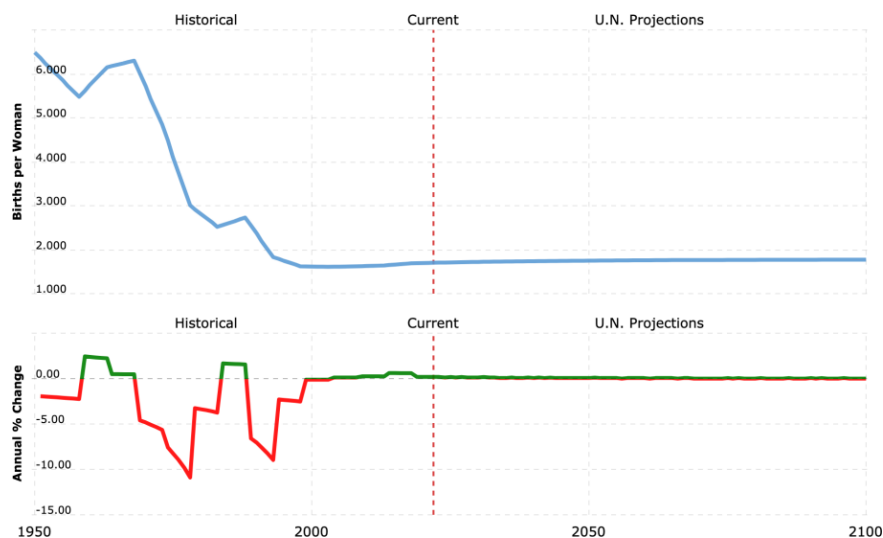

Figure 1: Chinese Fertility Rate From 1950 to 2020 and Estimated Fertility Rate from 2020 to 2100, via United Nations. (https: // population. un. org/ wpp/)

2.   Literature Review

A growing literature has examined the relationship between housing markets and fertility behaviors under various contexts. There are mutual influences between housing markets and population change [4]. That is, housing markets are influenced by population change, and housing market conditions also influence population change.

The influence of housing prices on fertility behaviors is particularly complex. On the one hand, high housing prices discourage the formation of families, resulting in delayed births and low fertility rates [5,6,7,8]. Using data from Census in the Czech Republish after 1989, Kostelechy Vobechá et al (2009) find that women in those districts with affordable housing markets would have their children

sooner, while districts with lower affordability in housing markets cause women to delay their children's birth [5,8]. Likewise, a lower total fertility rate was also found in areas where local housing prices are high compared to the local salary level. Using the US data, Clark also finds that the effect of being in an expensive housing market is a delay of first births by 3 to 4 years, notwithstanding the change in completed fertility is not found with enough evidence [6]. Based on evidence from annual time series data in Australia, Li reinforces this relationship, meanwhile pointing out that the negative relationship between fertility rates and housing prices tends to be more notably observed in the early 30s [5].

On the other hand, a boost in housing prices increases family wealth among homeowners, which upraises the incentive for them to give birth. Li indicates that housing price inflation causes housing wealth growth for homeowners, while an increase in housing price burden aggravates the burden on renters [5]. As a result, the inflationary housing market increases the fertility rate among homeowners while decreasing the fertility intention of renters. Lovenheim and Mumford, based on the Panel Study of Income Dynamics from 1985 to 2007, show that an additional $100,000 in housing wealth will lead to 16% to 18% increment in the likelihood of having a youngster [9]. Using renters as the control group, macro-data from Taiwan also presents that homeownership has positive effects on how many children a family will have and a negative effect on the female's first birth age [10].

Contrary to the influence of the housing market on fertility behaviors, Levin, Montagnoli, and Wright, through a comparison of Scotland and England and using a difference-in-differences methodology, examine the positive effect of housing prices exerted by population growth [11]. By using OECD country data, Malmberg (2012) also shows that the declining fertility induces the demographical housing market pressure.

Apart from housing prices, many pieces of literature have also tried to investigate the relationship between income and fertility behavior, which is also elusive [12]. Simon points out that the reason why cross-section evidence and time-series direction yield a different direction of the impact of income on fertility is that the "lagged effects of income" and "systematic changes in taste for children" contribute to the negative relationship between income and fertility rate [13]. Lindo explores that there is a positive causal link between family income and fertility rate with a negative shock on family income [14]. The relationship between income and fertility rate varies across different regions in China, the context I study in this paper. To be specific, rural income is negatively correlated with income, whereas urban income is positively correlated with income [15]. This result indicates that children are inferior goods in rural areas but normal goods in urban areas. Nonetheless, this paper published in 1983 may be outdated to examine the current condition in China.

With that being said, the demographic behavior of individuals is associated with many factors other than housing prices and income, which could lead to contradictory conclusions to the aforementioned theories. Biological conditions (e.g., age and health), cultural values (e.g., religions and moral values), and socioeconomic factors (e.g., education, unemployment) also exert a considerable influence on fertility behaviors, creating potential endogeneities when examining the correlation between housing markets and fertility rates. For example, using Panel Study of Income Dynamics in the 1970s, Henretta finds that higher housing prices result in consumption behaviors rather than work or fertility behaviors and that higher costs of houses deter the purchase of houses, leading families to rent continuously [16]. Family relocation behaviors also play a significant role in the relationship between housing markets and fertility behaviors. Li and Shin state that when households have moved recently, their fertility rates tend to be more negatively correlated with the unit price of living space [8].

Based on the literature discussed above, it is indisputable that both housing prices and income affect fertility behaviors in several directions and ways, which may be particular in specific regions. However, cross-sectional data, which would induce sizable bias due to differences between regions,

is implausible to predict future trends compared to panel data. When doing research with cross-sectional data, it is important to control other main factors that would influence the results.

In China, many people have observed that people generally tend to give few births because of the exorbitant housing prices, and that wealthier people often have fewer children. Research based on Chinese Household Finance Survey from 2013 to 2017 shows that when there is a 1 percent increase in housing prices, there is an approximately 0.94 percent decrease in the probability of having a child [17]. It is also acknowledged that higher income will result in lower births in China [18,19]. This paper aims at investigating a potential correlation between individual financial conditions and willingness of giving birth specifically in China.

3. Data

In this study, I use datasets from the Chinese General Social Survey and National Bureau of Statistics, and the final dataset contains 342238 observations. The Chinese General Social Survey (CGSS) is conducted nationally and continuously since 2003, intending to provide systematic data to explore pressing social problems in China. The multiple years of CGSS surveys used in this paper cover all provincial units in mainland China except for Tibet and Xinjiang. Numerous scholars have studied various social topics based on CGSS, which plays an important role in the policymaking process and sociological international comparison [20,21,22]. I select surveys from 2012, 2013, 2015, 2017, and 2018, as these surveys have questions that can derive the dependent variable, birth preference, in our study. Hence, the CGSS is suitable for this study for its vast quality of data and questions. In addition, I use the NBS mainly for one of our explanatory variables housing prices released by the National Bureau of Statistics of China (NBS).

The dependent variable, birth preference, is retrieved from CGSS. The birth preference is a numeric discrete variable that ranges from 0-10, where the number 0-10 represents the number of children the subject is willing to have in the year of being asked. For example, 0 means the subject has no preference for giving birth, whereas 3 means the subject wants to have three children in that year. Figure 2 shows the distribution of the birth preference variable.

Our two main explanatory variables are housing prices and income, both of which demonstrate a considerable influence on fertility behaviors of families [23,24].

For Chinese housing prices, I search the annual database from the NBS. I extract data on the average selling price of commercial residential buildings in provinces included in the CGSS from the 2018, 2017, 2015, 2013, and 2012 databases. After retrieving the data, I establish a dataset and organized data on the average selling price of the commercialized building by year and province.

Income data are from the CGSS database, which is coded in a continuous manner. CGSS measures it by asking the individual total revenue in the former year. It shows that the median income is 15,000 Chinese Yuan (2,361 USD) across all years I study.
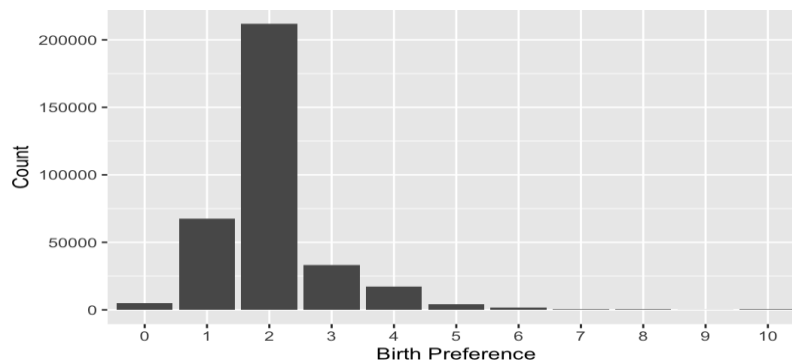

Figure 2: Birth Preference.

Figure 3 shows the mean of per capita disposable income and median of per capita disposable income in China from 2012 to 2020, retrieved from NBS.

Figure 3: Disposable Income per capita in China, via National Statistical Bureau.(http: // www. stats. gov. cn/ english/ Statisticaldata/ AnnualData/)

I take logarithm of the annual income of subjects of CGSS studies in years I select.
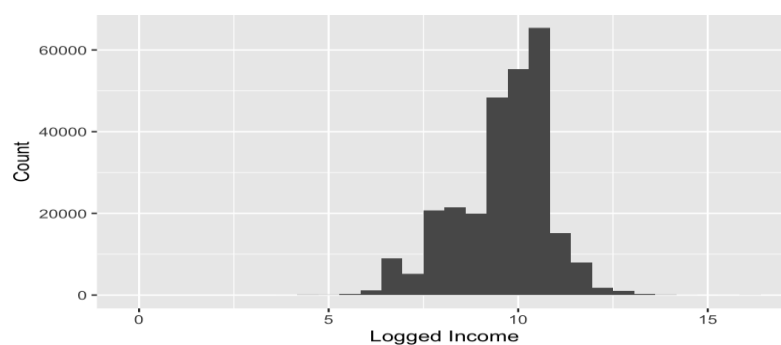Figure 4 shows a histogram display of the distribution of logged income.

Figure 4: Annual Income of Subjects from CGSS Studies After Taking Logarithm.

Age, education levels, and gender are also retrieved from CGSS as covariates. These sociological and economic features may also influence the decision of giving birth [25,26,27]. Age is a numeric discrete variable ranging from 17 to 118 calculated by subtracting the birth from the year of conducting the research, which represents the chronological age of subjects. In the sample of our study, the mean age is 48.76, and the median age is 48. Education level is a categorical variable. In CGSS, education level is divided to 14 categories (1 = non-educated, 2 = private school, 3 = elementary school, 4 = junior high school, 5 = vocational high school, 6 = normal high school', 7 = technical secondary school, 8 = vocational school, 9 = junior adult college education, 10 = junior normal college education, 11 = undergraduate adult education, 12 = undergraduate normal education, 13 = graduate or above). I encode the education levels greater than or equal to 9 (junior adult college education) as high level of education, represented by 1, and education levels less than 9 is represented by 0. The data shows that 55,336 (about 16.17%) subjects have high education levels. Gender is a categorical variable represented by 0 or 1, where 0 denotes male and 1 denotes female. Of the 342,238 subjects, 172,461 subjects are male, while 169,777 subjects are female.

4. Models and Results

Firstly, I use fixed effects model for all data in general. I include year- and provincial-level fixed effects to to investigate how each variable influences birth preference of each subject. The model is specified as follows.

$$BirthPreference_{i(j)t} = \beta_1 HousingPrice_{jt} + \beta_2 Income_{i(j)t} + \delta X_{i(j)t} + \lambda_j + \gamma_t + \epsilon_{i(j)t} \quad (1)$$

where the dependent variables $BirthPreference_{i(j)t}$ is the birth preference of respondent i who is interviewed in province j and year t; one key independent variable $HousingPrice_{jt}$ is the average housing price in a specific province j and year t; another key independent variable $Income_{i(j)t}$ represents the annual income of respondent i interviewed in province j and year t; $X_{i(j)t}$ denotes a set of control variables, including age, education levels, and gender of respondents; λ_j and γ_t denote province and year fixed effect, respectively.

I construct baseline fixed-effect models by using province and year as fixed effects. I first regress birth preference on logged housing price, represented as model 1. Model 2 is constructed by regressing birth preference on logged income. Model 3 is constructed by regressing birth preference on birth logged housing price and logged income. Model 4 is constructed by regressing birth preference on logged housing price, logged income, age, gender, and education.

The results displayed in Table 1 show a weak correlation between the housing prices and birth preference overall, but a strong negative relationship between income and birth preference, and a strong positive relationship between age and birth preference. Sociologists contend that the low income of a family is one of the most crucial obstacles for a couple to have more children [28]. However, the result shows that there is a negative relationship between a person's income and the person's preference of having children. That is, the more the person's income, the smaller number of children the individual wants to have. Rich families would have a better sexual education, whereas people in rural areas do not have mature contraception and sexual health knowledge. Another possible explanation is that wealthier people would view having children as a liability, which leads to huge expenditure on children's education, healthcare, etc. By contrast, unprivileged families would treat having more children as extra labor force, giving more births in the hope of getting rid of the poor economic condition of the whole family. Apart from that, the result shows that when people are older, they would want more children. This trend may be probably explained that older people generally are more stable and

less pressured in modern society, so they may want to raise more children than youngsters who experience the pressured life in modern society.

<div align="center">Table 1. Baseline Models</div>

	Birth Preference			
	(1)	(2)	(3)	(4)
Logged Housing Price	-0.136		-0.083	-0.274
	(0.144)		(0.126)	(0.140)
Logged Income		-0.127	-0.127	-0.057
		(0.009)	(0.009)	(0.006)
Age				0.016***
				(0.001)
Female				-0.022
				(0.017)
Education				0.031
				(0.025)
Province and Year FE	Y	Y	Y	Y
N	39,417	39,417	39,417	39,398
Adjusted R2	0.053	0.076	0.077	0.140

*$p < .1$; **$p < .05$; ***$p < .01$

I then examine my model from different regions, categorizing eastern, central, western, and northeastern four regions based on the definition given by the NBS. The Eastern region includes Shanghai, Beijing, Tianjin, Hebei, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong; central region includes Shanxi, Anhui, Jiangxi, Henan, Hubei, Hunan; the western region includes Sichuan, Inner Mongolia, Guizhou, Yunnan, Shanxi, Gansu, Ningxia, Qinghai, Guangxi; northeastern region includes Liaoning, Jilin, Heilongjiang.

After splitting data to four geographical regions, the result shown in Table 2 shows notable differences between the four regions. First, although there is not an evident correlation between housing prices and birth preference when running model for all data, the result from eastern area does show a strong relationship between the two variables, which does not appear in other three regions. Because the median and mean housing prices in eastern region are significantly higher than other regions (see Figure 5). In particular, this phenomenon is probably caused by the distinctively exorbitant housing prices in eastern region, where have more prosperous metropolises than other three regions. Respondents in these areas are more likely to be influenced by the high housing prices. Second, the result yields a positive estimate of logged income in eastern region, which is specifically significant within 0.01 percent level. Nonetheless, central region, western region, and northeastern region do not have significantly strong correlation between income and birth preference.

Table 2. Regional Models

	Birth Preference			
	Eastern Region	Central Region	Western Region	Northeastern Region
Logged Housing Price	−0.147**	0.292	0.068	−1.298
	(0.054)	(0.369)	(0.190)	(0.490)
Logged Income	−0.055**	−0.046***	−0.058***	−0.036*
	(0.019)	(0.010)	(0.008)	(0.012)
Age	−0.043	−0.009	0.020	−0.018
	(0.030)	(0.014)	(0.020)	(0.069)
Female	0.013***	0.019***	0.018***	0.019**
	(0.001)	(0.001)	(0.001)	(0.002)
Education	0.010	−0.043	0.011	0.114
	(0.035)	(0.035)	(0.035)	(0.049)
Province and Year FE	Y	Y	Y	Y
N	16,093	8,331	8,291	5,825
Adjusted R2	0.104	0.160	0.151	0.099

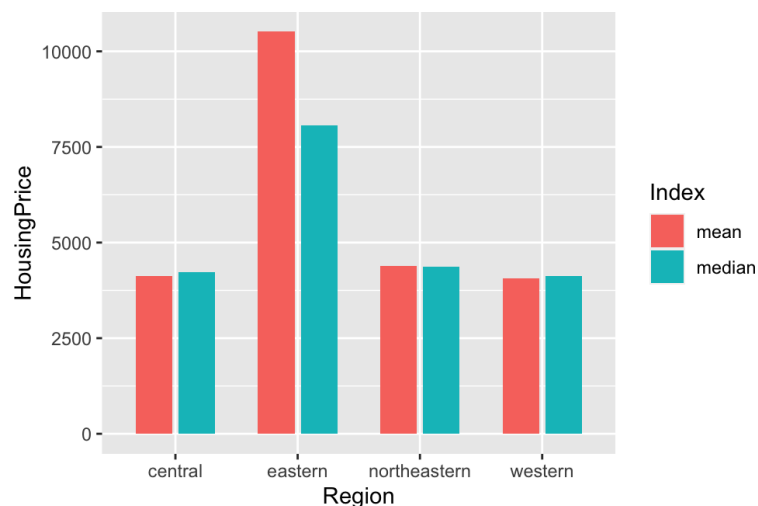*$p < .1$; **$p < .05$; ***$p < .01$

Figure 5: Housing Prices in Each Region.

Moreover, I also construct fixed-effect models for females and males respectively to demonstrate the difference in fertility behaviors caused by gender. I divided the subjects based on gender and compare the difference between gender on how birth preference responds to each variable.

I then examine the difference in fertility decisions between genders, shown in Table 3. The first model shows results for females, while the second model shows results for males. The result indicates a strong negative correlation between income and birth preference among women, whereas men are less responsive to the change in income. This may be probably due to the fact that women are inherently more risk-averse, as proved by Charness and Gneezy in their study [29]. Raising children

usually means more expenditures and higher risks for the whole family. The more income women have, the less they want to take the risk to give up their current living standard. Additionally, males tend to be more responsive than females to changes in housing prices. The gender difference shows that women are more focused on income, while men are more focused on housing prices when considering giving birth.

Table 3. Models Based on Gender Difference

	Birth Preference	
	Female	Male
Logged Housing Price	-0.131	-0.378**
	(0.155)	(0.154)
Logged Income	-0.077***	-0.037***
	(0/009)	(0.008)
Age	0.019***	0.014***
	(0.001)	(0.001)
Education	0.083**	0.0003
	(0.030)	(0.027)
Province and Year FE	Y	Y
N	18,855	20,543
Adjusted R2	0.175	0.114

*$p < .1$; **$p < .05$; ***$p < .01$

To further investigate the non-linear relationship between explanatory variables and birth preference, I construct quadratic regression shown in Table 4. The result indicates a significant quadratic relationship between birth preference and income. Specifically, birth preference first decreases as income increases and then increases as income increases. Based on the coefficient of quadratic term and linear term in the model, the income that results in the minimum birth preference is approximately 280,000 RMB (43,800 USD). That is, respondents who have an annual income of 280,000 RMB give the fewest births. This figure is considerably higher than the average income in China. In other words, only a few citizens in China will give more births even when they earn more money. The quadratic analysis provides a plausible explanation of why the Chinese negatively respond to an increase in income when giving birth.

Table 4. Quadratic Analysis Models

	Birth Preference			
	(1)	(2)	(3)	(4)
Square of Logged Housing Price	0.025		0.042	0.007
	(0.039)		(0.042)	(0.034)
Logged Housing Price	−0.630		−0.966	−0.438
				(0.708)
Square of Logged Income		0.020***	0.020***	0.020***
		(0.003)	(0.003)	(0.003)
Logged Income		−0.502**	−0.502**	−0.432***
				(0.063)
Age				0.016***
Female				−0.018
Education				−0.00003
Province and Year FE	Y	Y	Y	Y
N	39,417	39,674	39,417	39,398
Adjusted R2	0.053	0.079	0.079	0.142

*p < .1; **p < .05; ***p < .01

5. Conclusion

This paper, based on data from CGSS and NBS reveals three key findings. Firstly, I find that wealthier individuals tend to have fewer children. This trend also occurs around the globe, especially in more developed countries. Secondly, a regional difference occurs in the relationship between housing prices and birth preference. The Eastern region, where housing prices are noticeably higher than other regions, shows the most positive and significant relationship between housing prices and birth preference. Thirdly, females respond to income more than housing prices in terms of influence on their birth preference, while males are just the opposite. It indicates that gender difference plays a role in how people's birth willingness would be influenced by their financial conditions. Finally, the U-shape relationship between income and birth preference resulting from the quadratic analysis shows that individuals with an annual income of approximately 280,000 RMB (43,800 USD) are least willing to give birth.

The results of this study have several policy implications. Because higher income leads to lower expectations of the number of kids, the Chinese government may incentivize relatively wealthy families to raise more children by reducing education costs, giving extra subsidies, or cutting taxes. For regions such as Beijing and Shanghai, where housing prices are exorbitantly high, cooling the overheated property market seems to be a necessary tool in order to reverse the declining fertility rates. Also, the gender difference implies that the government should target different groups of people when disseminating childbirth knowledge and encouraging more births in the public. By considering the results from this paper, the Chinese government, or other countries with similar economic conditions to China, can develop more efficient policies to encourage population growth and adjust the aging population structure.

References

[1] Cui, Yuming, Jingjing Meng and Changrong Lu. N.d. "Recent developments in China's labor market: Labor shortage, rising wages and their implications." Review of Development Economics. Forthcoming.

[2] Lee, Ronald and Yi Zhou. 2017. "Does Fertility or Mortality Drive Contemporary Population Aging? The Revisionist View Revisited." Population and Development Review 43(2):285– 301.

[3] Singh, Teshu. 2012. Demographic Dividend in China: The Challenge Ahead. Technical report Institute of Peace and Conflict Studies.

[4] Malmberg, Bo. 2012. "Fertility cycles, age structure and housing demand." Scottish Journal of Political Economy 59(5):467–482.

[5] Li, Ang. 2018. "Fertility and Housing Market: Australian Evidence.".

[6] Clark, William AV. 2012. "Do women delay family formation in expensive housing markets?" Demographic research 27(1):1.

[7] Kostelecky`, Tom´aˇs, Jana Vobeck´a et al. 2009. "Housing affordability in Czech regions and demographic behaviour–does housing affordability impact fertility?" Sociologick`y ˇcasopis/Czech Sociological Review 45(6):1191–1213.

[8] Li, Bingqin and Hyun Bang Shin. 2013. "Intergenerational housing support between retired old parents and their children in urban China." Urban Studies 50(16):3225–3242.

[9] Lovenheim, Michael F and Kevin J Mumford. 2013. "Do family wealth shocks affect fer- tility choices? Evidence from the housing market." Review of Economics and Statistics 95(2):464–475.

[10] Lin, Pei-Syuan, Chin-Oh Chang and Tien Foo Sing. 2016. "Do housing options affect child birth decisions? Evidence from Taiwan." Urban Studies 53(16):3527–3546.

[11] Levin, Eric, Alberto Montagnoli and Robert E Wright. 2009. "Demographic change and the housing market: evidence from a comparison of Scotland and England." Urban Studies 46(1):27–43.

[12] Freedman, Deborah S. and Arland Thornton. 1982. "Income and Fertility: The Elusive Relationship." Demography 19(1):65–78.

[13] Simon, Julian L. 1969. "The Effect of Income on Fertility." Population Studies 23(3):327–341.

[14] Lindo, Jason M. 2010. "Are Children Really Inferior Goods? Evidence from Displacement- Driven Income Shocks." The Journal of Human Resources 45(2):301–327.

[15] Birdsall, Nancy and Dean T. Jamison. 1983. "Income and Other Factors Influencing Fertility in China." Population and Development Review 9(4):651–675.

[16] Henretta, John C. 1987. "Family transitions, housing market context, and first home pur- chase by young married households." Social Forces 66(2):520–536.

[17] Clark, William A. V., Daichun Yi and Xin Zhang. 2020. "Do House Prices Affect Fertility Behavior in China? An Empirical Examination." International Regional Science Review 43(5):423–449.

[18] Roser, Max. 2014. "Fertility rate." Our world in data .

[19] Liu, Jun and Taoxiong Liu. 21. "Two-child policy, gender income and fertility choice in China." International Review of Economics & Finance 69:1071–1081.

[20] Su, Yu-Sung, Donald Lien and Yuling Yao. 2022. "Economic growth and happiness in China: A Bayesian multilevel age-period-cohort analysis based on the CGSS data 2005–2015." International Review of Economics & Finance 77:191–205.

[21] Wang, Jing, Changyong Liang and Keqing Li. 2020. Impact of Internet use on elderly health: empirical study based on Chinese general social survey (CGSS) data. In Healthcare. Vol. 8 Multidisciplinary Digital Publishing Institute p. 482.

[22] Chen, Nanqian, Yanpei Shen, Hailun Liang and Rui Guo. 2021. "Housing and adult health: Evidence from Chinese general social survey (CGSS)." International Journal of Environ- mental Research and Public Health 18(3):916. URL: https://doi.org/10.1177/0160017620922885

[23] Pan, Li and Jianguo Xu. 2012. "Housing price and fertility rate." China Economic Journal 5(2-3):97–111.

[24] Schultz, T Paul. 2006. "Fertility and income." Understanding poverty pp. 125–142.

[25] Gangadharan, Lata and Pushkar Maitra. 2003. "The effect of education on the timing of marriage and first birth in Pakistan." Journal of Quantitative Economics 1(1):114–133.

[26] Song, Ju-Eun, Jeong-Ah Ahn, Sun-Kyoung Lee and Eun Ha Roh. 2018. "Factors related to low birth rate among married women in Korea." PLoS one 13(3):e0194597.

[27] Ebin, V. 1996. "African men want more children than their wives." Population today 24(10):3.

[28] Sukneva, Svetlana A, Anastasiya S Barashkova and Kyunnei YU Postnikova. 2020. "Birth rate, number of children and family income: trends and relationships." Ekonomicheskie i Sotsialnye Peremeny 13(2):201–213.

[29] Charness, Gary and Uri Gneezy. 2012. "Strong evidence for gender differences in risk taking." Journal of Economic Behavior & Organization 83(1):50–58.