

The Impact of Social Security on Fertility Preference: Evidence from China Health and Nutrition Survey

[Abstract]

Our research intends to present whether the attendance of the new rural commercial medical system (NRCMS) has an eliminating effect on people's fertility willingness in rural China. Based on the dataset from China Health and Nutrition Survey, we use a logit model to assess the impact of attending NRCMS on the traditional behavior of 'raising a child to provide for the old age'. We expect social security to have a negative impact on rural families' optimal number of birth.

1. Motivation

For a long time, rural families in China intend to give birth to more children than urban residents. A first reason is that rural residents worry about their retired life, as a result, they raise more children to prepare for their old age. Second, rural families have serious son preference, which is caused by the belief that only a son could carry on a family's lineage.

Since the 1980s, the Chinese government has implemented a birth planning policy, effectively reducing the number of people born in China. However, this policy has also brought along many drawbacks. For example, the Birth Planning Policy somehow increased people's gender preference, which leads to the phenomenon of selective abortion as well as abandoning female children. Besides, people are not changing their fertility view voluntarily. Therefore, our research attempts to explore whether social security, especially rural medical security, can be an alternative answer to the compulsory policy.

2. Literature Review

Many existing literature have established a negative impact of social welfare on people's fertility behaviour. Holm (1975) studied the impact of social security programs on total fertility rates of 67 countries and reached a significant negative effect. Holmqvist (2011) studied data from sub-Saharan African countries and found out that the introduction of a subsidized pension system resulted in 0.5-1 decrease in children per woman.

Considering the Chinese cases, Gan Li et al (2010) applied CHNS data to investigate the effect of social welfare and reached the conclusion that the government's subsidies for the new rural cooperative medical system will incite 2.36 times the growth of rural residents' consumption, which may reduce people's thought of raising more children to prepare for their old age. Wang Tianyu and Peng Xiaobo(2015) employed a theoretical model and divided the impact of NRCMS into 2 categories: income effect which refers to the income increase caused by the implementation of insurances; and the spillover effect, which indicates the decreasing

willingness to reproduce since there is less need to raise a child for insuring themselves. Their empirical results proved that the spillover effect dominated. However, they treated rural group and urban group as a whole dataset, and failed to provide a comparison.

3. Research Design

3.1 Data

We plan to use data from the China Health and Nutrition Survey (CHNS), which is an ongoing international collaborative project between the Carolina Population Center and the Chinese Center for Disease Control and Prevention. The survey covered the urban and rural areas of China's eastern, central and western regions in nine provinces (Liaoning, Heilongjiang, Shandong, Jiangsu, Henan, Hubei, Hunan, Guangxi, Guizhou) for ten rounds (1989, 1991, 1993, 1997, 2000, 2004, 2006, 2009, 2011, 2015).

We select data based on three conditions: 1) only rural observations are kept, 2) only ever married women under 52 years old are kept, 3) only data from 2000 to 2009 are kept. Eventually, our dataset covers 4589 observations for 4 rounds (2000, 2004, 2006, 2009).

3.2 Method

3.2.1 Logit Model

$$P(child = 1 | insurance_{it}, X_{it}) = \frac{I}{1 + e^{-(\alpha + \beta insurance_{it} + \delta X_{it})}}$$

We plan to use the logit model to estimate the probability of planning to have another child ($child=1$), given the insurance attendance status (0 or 1) and other control variables X_{it} for individual i at time t . We will first run regression on 2000-2004, which contains two survey rounds before and after the system was officially authorized (in 2003), to analyze the instant effect of the new insurance system on the fertility preference of rural women. Then we will use the DID model to try eliminating effects of unobserved heterogeneity that does not change as time goes by.

3.2.2 Difference-in-Difference Model

$$child_{it} = \alpha + \beta_1 insurance_{it} + \beta_2 post_{it} + \gamma insurance * post_{it} + \delta X_{it} + \epsilon$$

Here $child_{it}$ is the number of children for individual i at time t . Adverse causality may exist in this insurance participation issue and it can be solved by using an instrumental variable “whether the insurance is promoted in the village individual lives in”; however, we do not include this instrumental variable because of data limitation and this may be one of the limitations of the paper. $post_{it}$ is a dummy variable and is equal to 1 in 2004 and equal to 0 in 2000. The effect of attending NRCMS on fertility choice is measured by parameter γ .

Outline of Schedule

Specific dates for conducting data work: March 22nd to April 5th,

Estimation work: April 5th to April 19th,

Write-up the final research paper: April 19th to April 26th.