

# Quantitative Estimates of the Families Losing Only Child in China and Its implication for Social Assistance

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## Extended Abstract

### 1. Overview

Children are the main source of elderly support for majority of Chinese parents, especially in the rural areas. Losing their only child, the parents of many of the more than 150 million one-child families (Yang 2007) would basically lose all hopes in life. Under current social welfare systems, the elderly of no child only receives about RMB 170 (US\$ 28) per month for rural families and 340 RMB (US\$ 57) per month for urban families as allowance from the government. The Chinese one-child parents have made the greatest sacrifices under the one-child policy. When the parents of one-child families increasingly reaches retirement age, the needs of social assistance for the families losing only child (FLOC) have become a major concern for Chinese society.

However, studies on assessing the needs for supporting those aged parents of FLOC and its implication for the social welfare system are lacking. In the past decades, there are numerous studies investigating the impacts of one-child policy on fertility level, sex ratio, family structure, family relationships, family lifestyle, and population aging (Therese, 2005; Yang, 2007; Du, 2012; Nie, 2014). However, the risk of one-child families losing their only child has not received enough attention (Jiang, 2014). Particularly, the prevalence of families losing only child can vary considerably across regions in China, because of the large variations in socioeconomic, demographic and institutional circumstances. For instance, there have been differentiated population policies between rural and urban areas from the commencement of family planning program. While couples in both rural and urban areas theoretically should stop childbearing after giving the first births to a baby son, couples only in the rural are allowed to give a second birth had the first births are a baby girl. Therefore, the prevalence of only-child families in the urban areas is significantly higher than in the rural. As a result, the proportion of urban families losing only child could also be considerably higher. One the other hand, the mortality risk of rural population is higher than urban population across all age groups, which will also determine the possibility of couples losing the only child and also affect the duration of the aged staying at the status of FLOC. Moreover, China's recent adjustment to the one child policy that allows couples

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from single-child families to give a second birth may reduce the number of single-child families, accordingly number of families losing only child. And, the impact of changing policy may differ substantially among couples across different age groups and under different socioeconomic conditions, given the differentiated infecundity and reproductive values and behavior in Chinese population.

In order to provide necessary social assistance to the elderly of FLOC, it is important to estimate the total number of FLOCs over time, accounting for the above-mentioned impacts of differentiated population policies, fertility, mortality and other socioeconomic and cultural factors. However, such studies do not exist, as far as we are aware. Our paper aims to meet this gap.

This research is mainly designed to answer four basic questions: (1) What is the current and future numbers of one-child families in China? (2) How many families have lost and may lose their only child? (2) What is the proper social assistance level for these families? and (4) How will the number of FLOCs change because of the recent adjustment to the one-child policy?

Our study reveals that although the numbers of only-child families in rural areas are smaller than in urban areas, the risk of death in rural areas is higher than in urban areas. As a result, there are more FLOCs in rural areas. The study suggests that Chinese central government should increase the level of social assistance to the FLOCs and an improved the social assistance system is especially needed for the rural area which is currently much less complete than in the urban areas.

## 2. Methodology

To assess the number of only-child families, we calculate the probability of women having only child which is determined by the function of fertility rate and interval of childbearing. The probability of women having only child can be represented as the integral equation below (Yang, 2007):

$$P_{1o}(T) = \frac{1 - r}{1 - r \cdot \int_0^T q_2(t) dt} \quad (1)$$

$$\text{given, } r = \frac{TPPR_2}{TPPR_1} \quad q_2(t) = \frac{1}{N_2} \cdot \frac{dN_2}{dt}; \quad \text{and} \quad \int_0^\infty q_2(t) dt = 1 \quad (2)$$

where  $P_{1o}(T)$  is probability of woman have only child during period  $T$  after giving birth to the first child;  $TPPR_1$  is total progressive fertility rate of giving birth to the first child of female queue;  $TPPR_2$  is total progressive fertility rate of giving birth to the second child of female queue;  $r$  is Ratio of the female who have second child to the female queue who have one child;  $q_2(t)$  is interval from first child to second child;  $N_2$  is the expectancy number of having the second child.

As the gender of first child plays an important role in determining the possibility of having a second child, we have the equation as below:

$$\begin{cases} P_{1mo}(T) = \frac{1 - r_{10}}{1 - r_{10} \cdot \int_0^T q_{10}(t)dt} \\ P_{1fo}(T) = \frac{1 - r_{01}}{1 - r_{01} \cdot \int_0^T q_{01}(t)dt} \end{cases} \quad (3)$$

Where  $P_{1mo}(T)$  is probability to have only child during period  $T$  after giving the first birth to a boy;  $P_{1fo}(T)$  is probability to have only child during period  $T$  after giving the first birth to a girl;  $r_{10}$  is the ratio of the female who have second child to the female queue who have a boy;  $r_{01}$  is the ratio of the female who have second child to the female queue who have a girl.

### 3. Results

While one-child families in rural areas are less prevalent than in urban areas, the mortality risk of rural population is higher than urban population across all age groups and for both male and female (Li Shuzhuo,2005). Figure 1 shows the difference of the mortality rate of rural female and urban female. It can be found that mortality rate of rural female nearly as twice as urban female. Generally, daily care for children, sanitary conditions and workplace safety for adults in rural areas are not as good as urban areas, which bring higher mortality rate for rural people. In the same areas, the mortality rates of only child and non-only child are regards as the same. That is, the mortality rates are determined by age, gender, and rural-urban factor.

We pay particular attention to the one-child families, the mortality rate and number of deaths the children of the mothers aged above 49 who pass the age of childbearing. We then analyze the current and needed social assistance levels for the FLOCs in urban and rural areas, and provide references to improve the current support system.

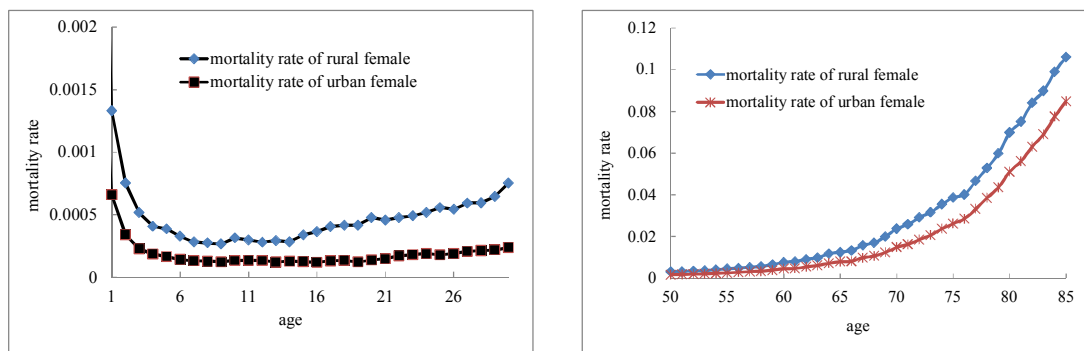


Fig.1 Mortality rate of rural female and urban female

Our research shows that up to 2010, there are 79.49 million one-child families in rural areas and 99.27 million one-child families in urban areas (Figure 2). Among the total one-child families, 2.41 million families have experienced deaths of their only child, 1.59 million in the rural and 0.83 million in the urban areas. The number of parents who lost their only child and the

wives aged more than 49 is 553 thousand in rural areas, and 268 thousand in urban areas. The figure is projected to continuously increase in the next two decades.

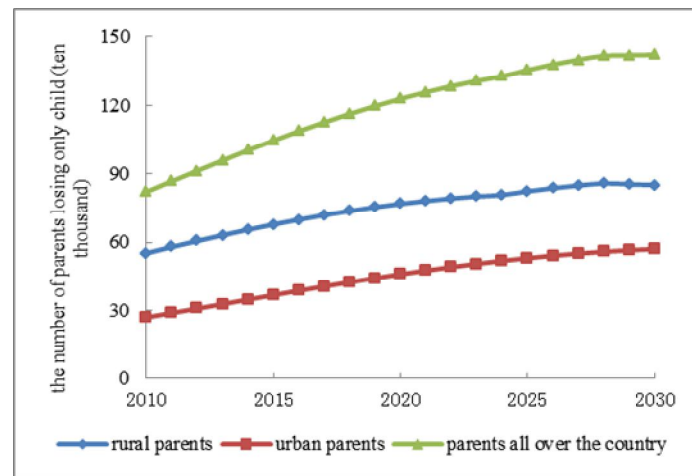


Fig.2 The number of parents aged at 49 and over who lose their only child from 2010 to 2030

The current monthly allowance to the FLOCs as social assistance provided by government to the FLOCs is 170 yuan for the rural families and 340 yuan for the urban families. This is not reasonable. Now there are endowment insurance for ordinary families, and lowest life guarantee for low-income families. In this social welfare system, the social assistance for FLOCs is lowest. Other welfare policies have been made with less support for rural families because of different living cost in rural and urban areas. Rural families contributed the same as urban families for population control in China. So the social assistance should be the same for rural and urban families.

What is the reasonable level of social assistance for FLOCs? Local government has improve the social assistance for these parents recent years. The level varies in different regions. In Jiangsu and Jiangxi provinces, parents losing only child can get 500 yuan per capita every month; In Zhengzhou it is 270 yuan; while in Nanchang, it is 470 yuan for parents aged 49-59 and 670 yuan for parents aged over 60.

Considering the economy and financial support level of the whole country, we suggest that the social assistance from the central government should increase 500 yuan for parents aged 49-59, and 800 yuan for parents aged above 60. Local government can also provide more support according to the central government's policy. Based on our estimated number of FLOCs over time, the amount of funding needed will be 5.11 billion in 2010, and 13.47 billion by 2030 if the one-child policy continues (Fig.3). We will estimate the changes in the number of FLOCs and their implications for improving the social welfare system based on the possible impacts of adjusting family planning policy on fertility and mortality, accounting for the propensity of couples who are eligible to give a second birth actually take the chance, the prevalence of infecundity by age of the wives, and the potentially changing gender preferences of the couples for those second births.

#### 4. Conclusions

- (1) Up to 2010, there are 79.49 million one-child families in rural areas and 99.27 million one-child families in urban areas. A total 2.41 families nationwide have experienced deaths of their only child, with 1.59 million in the rural and 0.83 million in the urban areas.

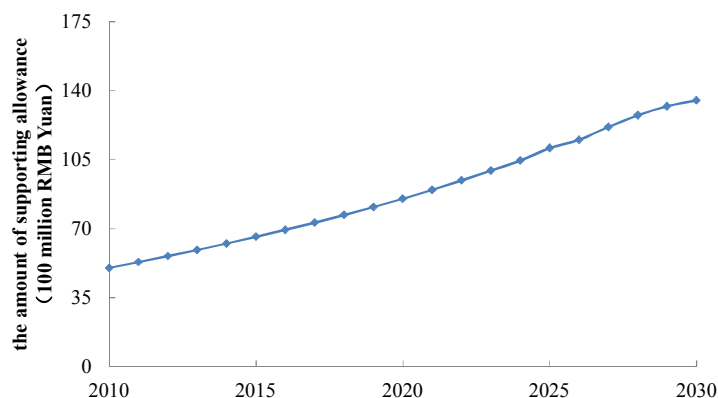


Fig.3 Fiscal expenditure given to the parents aged at 49 and over who lose their only child

- (2) The number of parents who lost their only child is 553 thousand in rural areas, and 268 thousand in urban areas.
- (3) The social assistance level should be improved to be 500 yuan for parents aged 49-59, and 800 yuan for parents aged more than 60. Given the increasing number of FLOCs over time, the amount of funding needed to be 5.11 billion in 2010, and 13.47 billion by 2030 if the one-child policy continues.
- (4) While the newly implemented adjustment to the one-child policy may potentially drive down the number of FLOCs, large variations may exist due to the changing desired family sizes, gender preferences and other socioeconomic and demographic conditions.

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