Living Opportunity of Girls—A Revisit to Prenatal/Postnatal Gender Disparities in China

(Extended abstract)

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Introduction:

The puzzle of "missing girls" in China has attracted broad attention from worldwide demographers for a couple of decades. During the past twenty years, rising sex ratio at birth has been among the most striking demographic changes in the Chinese population. The long tradition of son preference has been widely regarded as the root cause of "missing girls" and high sex ratio at birth in China. Without much change in the tradition of son preference, the rapid fertility decline, initiated by the birth control policy and the socioeconomic development in China since the late 1970s, is expected to further squeeze the living opportunities for girls.

A great body of literature has addressed the son preference and its consequences in China. According to those previous studies, son preference has important effects on women's childbearing and rearing behaviors, including abortion, breastfeeding, and adoption in China. In general, these studies suggest that female fetuses are more likely to be aborted; baby girls are breastfed for a shorter duration on average and they are more likely to be adopted out, neglected for medical care or dropped out from school in times of resources shortage.

However, most of these studies make conclusions based on small samples in some selected areas, and they focus exclusively on a few aspects of prenatal or postnatal treatments. How is girls' living opportunity compared to boys' across their early life course? To what extent the revealed gender disparity in childbearing and rearing behaviors is representative of the situation in contemporary Chinese families? To answer these questions in particular, and to understand the family gender disparity in general, it is vital to conduct systematic research on the prenatal/postnatal gender discrimination in contemporary China.

In this study, we employ the data from China's National Family Planning and Reproductive Health Survey (FPRHS) in 2001 to examine the prenatal/postnatal gender differentials. The perspective we take here starts mainly from prenatal nutrition supplement, to medical cares during delivery, duration of unsupplemented breastfeeding, and finally the living status of the child by the survey time. From this dynamic process, it is expected to find out the potential gender differentials and the related impacts on girls' living opportunity. We apply a multilevel framework to analyze all these outcomes. Gender is of central interest in our outcome variables modeling. Meanwhile, maternal characteristics and other child-specific variables are also included into our analysis for the potential heterogeneity.

Previous Research

"[D]uring the 1980s and 1990s gender was created—or, from a longer historical perspective, perhaps re-created—as an active force in demographic life", Greenhalgh and colleague conclude from their field work in Shaanxi province of China (1995: 633). As noted by these and many other researchers, China has observed the emergence and growth of family gender bias[1] in many areas along with its remarkable fertility decline since the 1970s. Among other propositions, prenatal sex selection has been discussed most profoundly and agreements

[1] It refers to gender-based discrimination behaviors within family, including prenatal sex-selective abortion, discrimination in breastfeeding and human capital investment, and so forth.

have been largely arrived on its prevalence and proximate effects on sex ratio at birth (e.g., Yan and Lu 1995, Xie 1998, Chu 2001, Qiao 2004, Qi 2005). For instance, Qi (2005) remarks that fetal sex and family sibset composition are important predictors of induced abortions in China; in addition, significant maternal heterogeneity is observed in terms of age and education.

Concerning other prenatal and postnatal gender differentials, relatively fewer studies can be found hitherto. In their ethnographic-cum-demographic study of the population policy and reproductive behavior in rural China, Greenhalgh et al (1995) employ data collected from the field work in three villages of Shaanxi province in 1988 and 1993. They find that population policy in China has been closely related with gender differentials in childbearing and rearing behaviors in the studied area. By classifying the local implementation of population policy into different phases[2], they argue that the one-child policy has given rise to significant gender gaps in the duration of breastfeeding and likelihood of being adopted. They maintain that before 1970, breastfeeding favored neither sex and adoption was a two-gender practice in the studied area. With the introduce of "one-child" policy and the induced fertility decline, however, son preference manifested itself by turning adoption into a girl-only practice and making breastfeeding more advantageous to boys. In addition, they suggest that gender disparity also interacts with birth order—not all girls are discriminated against in family's childbearing and rearing behaviors.

Using data from the 1985 In-depth Fertility Survey (phase I) conducted in some selected provinces in China, Tu (1990) examines the potential gender differential in the duration of breastfeeding and the duration of unsupplemented breastfeeding in Shaanxi province. He finds that the duration of breastfeeding is longer for male children than for female children, though there is no significant gender differential in the duration of unsupplemented breastfeeding. In addition, the relationship between the duration of breastfeeding and the sex of the child changes with birth order.

Employing the data collected from a community-based household survey in two rural counties of Anhui province in 1993, Graham and colleagues (1998) examine son preference and gender discrimination in childbearing behaviors. By investigating the gender differentials in duration of breastfeeding and place of delivery, they contend that girls were breastfed for a significantly shorter period than boys, and the greatest difference occurs among the third-born children. Although no direct evidence is found for gender differential in the place of delivery, the authors suggest that this may be related with the underreporting of baby girls. Based on the lower-than-expected sex ratio of infant deaths, they also express suspicion on the neglect of girls.

Gender inequality in education investment has also attracted remarkable attention in academic research (Hannum 2005, Connelly et al. 2003, Niu 2002, et al.). In general, it is found that gender differential in children's education investments varies with the socioeconomic characteristics of the household as well as the community; in addition, the situation evolves with the macro socioeconomic development.

[2] According to Greenhalgh and colleague, the first phase, from roughly 1979 to 1983, was characterized by strict one-child policy and resistance from the local, when peasants defy the policy and insist on having more children than permitted by the policy. The second phase, roughly 1984-1987, was characterized mainly with negotiation in local policy implementation. And the last phase, from 1988 to 1993, was dominated by conformity to the policy.

Above all, a great body of literature has concerned gender disparity in Chinese families, particularly in the era of "one-child" population policy. These studies have contributed greatly to our understanding of son preference and the related social consequences in Chinese society. However, few studies to date have paid attention to the whole process of potential prenatal and postnatal gender discrimination. Although we have been informed from studies on prenatal sex selection that a great number of fetuses of undesired sex have been aborted, there are still many unwanted girls born alive for whatever reason. We know little about the prenatal and postnatal treatments for these live births. In addition, although some researchers suspect the existence of intended neglect of girls (e.g., Graham et al. 1998), more systematic studies on this topic should be done before we can be certain about the actual situation. Furthermore, almost all the research findings on gender disparity in breastfeeding and other childbearing and rearing activities have been based on observations in very limited areas, and to what extent these findings represent the reality in Chinese society is still yet to know.

Data and Research Method

The data used in this study are from China's National Family Planning and Reproductive Health Survey in 2001, conducted by the State Family Planning Commission of China. The survey is designed to collect information on fertility, contraception and reproductive health of women at childbearing ages in 31 mainland provinces, autonomous regions and municipalities. A multi-stage probability-proportionate-to-size (PPS) sampling method is employed, and totally 39,586 women aged 15-49 were interviewed. The survey data contain information on complete pregnancy histories of all married women in the sample. Information on each live birth's prenatal nutrition supplement (mother's supplement of Calcium and Iron), place of delivery, duration of unsupplemented breastfeeding, and living status at the time of survey is also collected. In addition, maternal sociodemographic characteristics are also available in the dataset.

In this study, we employ the multilevel methodology to examine the gender differential in each of the designated prenatal and postnatal treatments (including prenatal nutrition supplement, place of delivery, duration of unsupplemented breastfeeding, and the child's living status at the survey time). Specifically, we use multilevel logit model to study the gender differential in prenatal nutrition supplement and that in the place of delivery. And we use multilevel survival analysis to analyze gender differential in the duration of unsupplemented breastfeeding and children's current wellbeing.

All these multilevel frameworks will contain two levels: the first—the child level—measures heterogeneity among children (or fetuses), with special interest in gender; and the second—mother level—models the cluster effects of maternal sociodemographic characteristics in child (fetus) treatment.

A general form of the model is as follows:
In the first level (child):

$$Y_{ij} = \beta_{0j} + \sum_{l=1}^{L} \beta_{lj} Child_{lij} + \varepsilon_{ij} \qquad (1)$$

In the second level (mother):

$$\beta_{lj} = \eta_{l0} + \sum_{m=1}^{M} \eta_{lm} Mother_{mj} + \sigma_{lj} \qquad \text{for } l = 0 \text{ to } L \qquad (2)$$

Where Y_{ij} is one of the studied outcome (or its corresponding transformation) that is from the i th child of the j th woman. And ε_{ij} , and σ_j are the corresponding error terms in each level.

Our child-specific explanatory variables include gender[3], family sibset composition, and year of birth. In the mother level, covariates such as ethnicity, age, education, and place of residence will be analyzed. Moreover, to study the whole process of prenatal/postnatal gender discrimination, we will include all the previous events as controls when modeling the later events. For instance, when studying current status of children, we will control for prenatal nutrition supplement and duration of breastfeeding.

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[3] We have special concerns on whether to include gender in the study of prenatal treatment. Although it is hard to directly explain the effect of gender on prenatal nutrition supplement, we suspect that parents already have the information on fetal sex with the prevalent practice of prenatal sex-identification in China.

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