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Family size and maternal health: evidence from the One-Child policy in China

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Abstract

In this paper, we examine the impact of family size on maternal health outcomes by exploiting the tremendous change in family size under the One-Child policy in China. Using data from the China Health and Nutrition Survey 1993–2006, we find that mothers with fewer children have a higher calorie intake and a lower probability of being underweight and having low blood pressure; meanwhile, they have a higher probability of being overweight. This would occur if a smaller family size increases the food consumption of mothers, leading underweight women to attain a normal weight and normal weight women becoming overweight. Robust tests are performed to provide evidence on the hypothesis that the tradeoff between children's quantity and mother's "quality" is through a budget constraint mechanism, that is, having more children decreases the resource allocated to mothers and affects their health outcomes.

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Notes

1. See, e.g., Becker (1960, 1991), Becker and Lewis (1973), Becker and Tomes

(1976), Rosenzweig and Wolpin (1980), Stafford (1987), Behrman et al. (1989), Kessler (1991), Guo and VanWey (1999), Gomes (1984), Goux and Maurin (2005), Angrist et al. (2006), Black et al. (2005), Qian (2009), Li et al. (2008), Rosenzweig and Zhang (2009).

2. Women who are pregnant are likely to develop Preeclampsia and have an increase in blood pressure after the twentieth week of pregnancy. However, after the delivery of the baby, it could be cured. (Source: NIH website http://www.nhlbi.nih.gov/health/public/heart/hbp/hbp_preg.htm).

3. Consider a simple model where utility function is \(U = U\left({n, q_p , q_c , y} \right)\), n is the number of children, q_p is parent's quality, q_c is children's quality, and y is the consumption of all other commodities. The budget constraint is $I = nq_c p_c + q_p p_p + yp_y$, where I is full income, p's are respective prices. The marginal rate of substitution between n and q_p would be determined by the ratio of their marginal utilities and the ratio of the market prices.

4. According to the 1% sample of the 1990 Population Census, people with ethnic Han account for approximately 92% of all population in China.

5. Beginning in 1986, in most provinces, couples living in rural areas can have a second child if the first one is a girl (Greenlaugh 1986).

6. BMI is a measure of body fat based on height and weight and applies to both adult men and women. It equals to weight divided by the square of height.

7. Source: Mayo Foundation for Medical Education and Research.

8. Source: Healthwise's website www.healthwise.org.

9. For the concern of sample attrition across years, we conduct a sensitivity test (available upon request) by adding the number of times each individual enters into the sample as a regressor. Its coefficient is not statistically significant, indicating that attrition does not affect our main results.

10. The death rate for pregnant women was 80 per 100,000 live births in 1990, a level much lower than world average (WHO).

11. If the degree of exposure to famine is different between the urban and rural (or between ethnic Han and minorities) residents, then the interaction terms between the timing variable and the urban dummy (or ethnic Han dummy) may pick up differences in exposure to the famine between urban and rural (or between ethnic Han and minorities) residents. In this case, these instruments may be directly correlated with the health outcomes.

12. Alternatively, a data set of women with adopted children would be helpful to differentiate these two mechanisms. To the best of our knowledge, no such data set with a decent sample size is available for Chinese women. Chen and Li (2009) use an adoptee children data set, but it contains little information on mothers.

13. According to the 1990 Population Census, mixed couples only account for 3.5% of all the married couples. In the northeastern and southwestern provinces that have a large minority population, this fraction is 7.9%.

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