



When a son is born: The impact of fertility patterns on family finance in rural China[☆]

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ABSTRACT

This paper examines the impact of an observable “shock”, the birth of a son, on household financial activities in rural China. We propose theoretical channels that endogenously generate heterogeneity in the levels of financial activities on the basis of a child's gender, even if parents do not possess discriminatory tastes, which we refer to as the “invest via a son” hypothesis compared to the conventional “taste for a son” explanation. Using nationally representative household data collected in 300 rural Chinese villages and econometric models that account for censored financial activities as well as endogenous fertility choices such as sex selection, we present strong evidence that having a son increases the amount of gifts and remittances a household receives from others by over 20%; it also increases both the amounts that a family loans and gives to relatives and friends. Moreover, having a son is found to increase household investments in both agricultural activities and family businesses while no type of expenditure increase with the arrival of a son, clearly consistent with our “invest via a son” hypothesis. Taken together, these results suggest that social conventions play important roles in household financial decisions that extend beyond the traditional role of budget constraints and consumption shocks.

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1. Introduction

Similar to other East Asian countries, Chinese society maintains a well-known tradition of strongly preferring sons over daughters. While the macroconsequences of this son preference have spawned a voluminous literature in both demography and economics,¹ there has been substantially less attention paid to outcomes at the household level. Most existing research at the household level investigates how parents treat their sons and daughters differently in consumption and human capital investments,² but does not address the consequences of how having a son affects household decisions or outcomes as a whole.³ If families consume and purchase

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¹ For example, Edlund (1999) and Guo and Deng (2000) discuss how son preferences can affect marriage patterns in China. Son preferences have also been shown to influence savings behavior (Wei and Zhang, 2011a), entrepreneurship (Wei & Zhang, 2011b) and criminal activity (see e.g. Edlund, Li, Yi, and Zhang, 2013; Boer & Hudson, 2002).

² Human capital investments (Brown, 2006; Song, 2001), consumption expenditures (Lee, 2008), expenditures on health care (Burgess and Zhuang, 2000), the intake of nutrients (Park and Pungpond, 2004) and health status (Yu and Sarri, 1997) are areas that have drawn the attention of researchers on gender inequality in China.

³ A clear exception is Knight, Shi, and Quheng (2010), which shows that having a son increases parents' labor supply and hence household income. In addition, Li and Wu (2011) show that child gender affects a woman's relative bargaining power within the family and household consumption decisions for durable goods.

inputs such as education and medical care differently for their sons and their daughters, it is reasonable to expect that families with different offspring gender structures to also vary in their financial activities and physical capital investment decisions.

The core of this paper is to empirically investigate if in rural China a specific form of household heterogeneity, whether the household has a male heir, influences household financial activities and investment decision making in multiple domains. Our empirical investigation is informed by a specific mechanism that we propose, which in the style of statistical discrimination, elucidates on how the arrival of a son changes how a family invests. In rural China, social security and community-based old-age care systems remain scarce, and children are viewed by many parents as the most important contributors to their old-age care. However, like in many developing and developed countries, not all children are equal when it comes to old-age care (Astone, Constance, Nathanson, Schoeni, and Kim, 1999). Cultural norms dictate that male adult children are primarily responsible for the care of their elderly parents while female adult children are mainly responsible for the care of their elderly in-laws.⁴ In conjunction with the common belief that female laborers are less productive than their male counterparts in agricultural production, these conventions provide powerful economic incentives for parents to favor sons over daughters. Thus parents who value the expected old-age support are now incentivized to invest more in their sons' future earnings, which leads to deeper engagement in borrowing, lending and investing activities by households who have young male heir(s) even in the absence of an explicit "taste" against daughters.

The predictions from this specific mechanism are tested using household data collected from 300 small villages in rural China.⁵ These villages are predominately located in regions where the cultural and institutional features generate distinctively different expectations and incentives for parents from the birth of a son instead of a daughter. Our main empirical challenges arise when we must account for censored financial activities as well as endogenous fertility decisions including sex selection. Accounting for endogenous fertility decisions remains one of the major empirical challenges facing researchers investigating data from rural China.⁶ After all, the strong son preference in rural China is not only manifested in discriminating investments in children of different genders but more prominently results in sex selective fertility decisions. Many families choose to abort a female fetus and practice a boy stopping rule.⁷ In the rural areas where our data is drawn from the one-child policy generally allows for a second child after five years.⁸ The son preference, however, is not necessarily monotonically increasing with the number of sons parents have. Conditional on having a son, the arrival of a daughter brings at least two pecuniary benefits to rural Chinese families besides her assistance on housework and sibling care: 1) the bride price that families receive when their daughter marries, which usually helps to finance the bride price that families have to pay toward the marriage of their son (e.g. Brown, 2009) and, 2) some of the wage income generated by the daughter before she is married helps the family to feed, cloth and educate her younger siblings, usually a son (e.g. see Parish and Willis, 1993; Tatyana and Vaithianathan, 2008). Thus, although the preference of the first son over any daughter is dominant, conditional on already having a son, it is possible that a daughter is preferred to an additional son in some situations.

It is important to state from the outset that this may not be the only mechanism at play. For instance, non-pecuniary incentives including cultural and social reasons may prompt parents to invest more in a son even when he is not expected to deliver additional monetary benefits to parents when compared to a daughter. It is neither our intention nor critical for establishing our results to rule out alternative mechanisms ranging from potential gender differences in productivity or other gift-giving customs in rural China.⁹ Our focus on expected old-age support from sons as the mechanism for heterogeneous household finance decisions in rural China results from it being more capable of producing empirically testable predictions than non-pecuniary motivations. In this paper, we argue that both the acceptance and rejection of these predictions are more informative than those from non-pecuniary mechanisms. Moreover, the evidence we present is clearly more consistent with our "invest via a son" hypothesis.

⁴ Cameron and Cobb-Clark (2008) and Das Gupta et al. (2003) both note that the persistence of son preference is driven by greater anticipated old-age support from sons relative to daughters and the absence of formal financial mechanisms for families to save for retirement. We should also note that while savings rate have risen sharply and evenly across provinces in urban China, there is an increasingly large amount of volatility in household saving rates across rural villages and provinces. This volatility in part reflects the limited degree to which both social norms and extended family households have changed in some areas whereas other areas have seen the opposite occur with the rapid urbanization of younger generations.

⁵ As documented in De Brauw and Rozelle (2008), among others, there is substantial heterogeneity in wealth, access to credit from the formal sector and family functioning across regions in China.

⁶ Data from both the 2000 and 2005 Chinese census indicate that there are five provinces with more than 125 male births for every 100 female births, with the odds-ratio peaking at 135 in Hainan (e.g. Das Gupta, Chung, and Li (2009) and Guilimoto (2009)). As such, we became uncomfortable treating the gender of the first born child as random in the analysis. Further, Hausman tests with our data rejected the hypothesis that the gender of the first child is exogenous and the degree to which this hypothesis was rejected was particularly high when we focused solely on the subsample of villages situated in provinces that the census reports as having highly unbalanced sex ratios.

⁷ Chu (2001), Yi, Tu, Gu, Yi, and Li (1993), Johnson (1996), Ebenstein (2010), among others document sex selection with data from China. Coale and Banister (1994), Graham, Larsen, and Xu (1998) and Wen (1993) present evidence of boy stopping rules.

⁸ The policy is underpinned by a system of rewards and penalties, which are largely meted out at the discretion of local officials and hence vary widely. In this study we will use spatial variation in these incentives to identify the impacts of household heterogeneity.

⁹ Our results are consistent with Chen and Zhang (2012) who also find that poor families in rural China offer larger gifts when a son is born. However, one of the robustness exercises to this study indicates that if we exclude families with young children, we continue to see families with boys to have greater financial activity. That exercise supports why other potential explanations may not fully capture what we observe in the data including Wei and Zhang (2011a) who argue that differential savings behavior occurs since parents will pay for the housing of adult sons upon their marriage. In the very poor remote regions where approximately one-third of the data we utilize was collected, Yi et al. (1993) among others report that marriage migration of young women is common and the surplus males in the village are known as bare branches. Further, extended family households with three or more generations are common in many of these villages. Yi and Wang (2003) document that in 2002 a large majority of those aged 80 and above, particularly in the rural areas live in these households headed by the adult son. Note that Rosenzweig and Zhang (2014) make clear the importance of coresidence in any study that tries to explain savings in China. Thus, our explanation for saving differences by child gender should be viewed as a complement to Wei and Zhang (2011a) since it applies to a different segment of the Chinese population among which Yi and Wang (2003) note that the traditional idea of relying on sons for old age care still remains prevalent in rural areas.

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