

Fertility Intention and Fertility Behavior: Why Stop at One?¹

-- Factors behind China's Below Replacement Fertility

Yong CAI, University of North Carolina, Chapel Hill

caiyong@unc.edu

WANG Feng, University of California, Irvine

fwang@uci.edu

ZHENG Zhenzhen, Chinese Academy of Social Sciences, Beijing, China

zhengzz@cass.org.cn

GU Baochang, Renmin University of China, Beijing, China

baochanggu@gmail.com

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Abstract

In countries where fertility level has dropped to well below the replacement level, it is often reported that the achieved fertility level falls short of the desired level by couples. China, a country that has joined the low fertility club, is commonly regarded as a special case in that an ongoing government “one-child” policy is believed to have suppressed fertility and in the absence of such an extreme policy, fertility could rebound to a much higher level. In this paper, we follow up a cohort of reproductive aged women interviewed three years ago in Jiangsu province, China, to examine the relationships among fertility desire, fertility intention and fertility behavior. We seek to uncover how fertility decision in this part of China is made within the Chinese familial and socioeconomic contexts. While having a second child might still be considered a privilege in the context of China's restrictive one-child policy, many Chinese couples in our study choose to stop at only one voluntarily, citing economic reasons.

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Introduction

With over a fifth of the world's population, China is a newcomer but an important one in the emerging global regime of below replacement fertility. Over the last two decades, China accelerated its momentum of economic growth that began earlier and has produced one of the most impressive economic miracles in the world's history. Little known to the outside world, China's national fertility level at the same time also dropped to well below the replacement level. China's current fertility level, measured by the total fertility rate (TFR), is believed to be around 1.5 (Cai 2008, 2009; Guo and Chen 2007; Retherford et al. 2005; Zhang and Zhao 2006; Morgan et al. 2009; US Census Bureau 2009). In China's more developed regions, fertility has been even lower for more than a decade, barely above the one child per couple level. In ten of China's 29 mainland provinces and municipalities, fertility based on the 2000 Chinese population census was 1.1 children per couple or below, a level that rivals the lowest fertility countries in the world (Gu et al. 2007a; Chen et al. 2009).

The processes as well as the underlying reasons of China's turn to below replacement fertility, as that in many other parts of the world, are not well understood. The Chinese case is further complicated by the fact that China has been implementing a strict government birth control policy that requires most Chinese couples to only one child per couple (Wang 2005; Gu et al. 2007a). Low fertility in China, in other words, is often attributed to the effect of government policy (e.g. NPFPC 2007; Jiang 2007), not the global cultural, political, economic, and social forces that have led fertility to fall below the replacement level elsewhere in the world.

We show in this paper that China in fact presents an important and unique opportunity to study the underlying forces of emerging global low fertility. The Chinese case is theoretically interesting because of the co-presence of three important forces. In addition to the presence of a unique restrictive birth planning policy, couples in China have also increasingly encountered two other forces that are commonly cited as explanations for below replacement fertility. These are structural changes that resulted in economic pressure and constraints imposed on young people, and ideational changes showcased by a more individualistic orientation that places marriage and childbearing at a lower priority than work and self-fulfillment in one's life (e.g. Caldwell and Schindlmayr 2003; Lesthaeghe and Surkyn 2004, Lesthaeghe 1995, van de Kaa 1987). At the forefront of a fledging global economy, and as one of the most dynamic economies in the world in the last two decades, China has clearly felt the impact of globalization and its associated forces affecting human reproduction. With an appropriate data source, which we explain below, we can disentangle the effect of government policy intervention from the other forces driving low fertility.

Fertility Desire, Intention, and Behavior

Studies of fertility changes in low fertility countries have repeatedly observed and reported that in contrast to populations undergoing the demographic transition where there is an “unmet need” for contraceptives to lower fertility, there is an “unmet demand” for having children (Bongaarts 2001). Achieved reproductive outcomes in many populations fall short of the expressed desires. Couples in many populations in other words are unable to produce as many children as they see to be desirable for themselves. In Japan, for instance, where data are available for comparison over time, the average ideal number of children has stayed at 2.5 for decades while observed fertility has been as low as around 1.3 for years (Retherford et al. 1996; Tsuya 2008). The gap between expressed fertility desire and achieved fertility, therefore, opens up a window to explore the reasons for “fertility failure” that contributes to below replacement fertility.

A small “unmet demand” has been similarly reported in the Chinese case. Its interpretation, however, hinges on the understanding of the effect of China’s ongoing one-child policy. According to recent surveys, the average ideal family size at the national level is about 1.7, slightly higher than the observed fertility (Guo 2008). If low fertility in China is mostly driven by the one-child policy, the “unmet demand” is then the gap between government policy and the public’s fertility desire. However, others explain this small gap as an inevitable social phenomenon in a post- demographic transition society, where readily available contraceptives and other fertility control technologies have minimized the number of “unwanted births.” Instead, it is postponement in marriage and childbearing and the ensuing sub-fecundity and infecundity that result in people missing their ideal fertility targets (Guo 2009; Morgan et al. 2009). The answer to this question for China then becomes whether couples stop at only one child when they are allowed to have two children under the current government birth control policy, and if they stop at one, what the reasons are.

This paper is based on a follow-up survey of a longitudinal study that is designed to understand reproductive preferences and behaviors in Jiangsu Province of China. Birth control policy in this Chinese province provides several exemptions to having two children. Among these exemptions are that all couples are allowed to have two children if one of the marriage partners is an only child in rural areas or both marriage partners are only children in urban areas. With three decades of the one-child policy, couples qualifying for having two children are now entering their marriage and childbearing age. Another exemption is that rural couples whose first child is a girl and who also meet certain demographic and social conditions are allowed to have a second child.

Relying on a baseline survey that was conducted three years ago, we found that despite policy allowance and while generally believing having two children with a balanced sex composition is the ideal family formation, the majority of our survey respondents had no plan to have two children (Zheng et al. 2009). Moreover, we found that economic transformation in this part of China had brought about with it an increased sense of economic uncertainty. Young Chinese couples were concerned with their own economic conditions and the opportunities and risks their next generation might face. Combined,

increased standards of living and economic uncertainty, a less traditional view on marriage and childbearing, and a sustained government birth control program featured by social mobilization, public propaganda campaign, and routine surveillance form the broad context of China's a new reproductive regime. Economic conditions and concerns over economic cost stood out as the most important forces that affect fertility intention. Personal attitude towards marriage and childbearing showed that the traditional large family ideal was giving way to a small family norm with only one or two children. China's continuing strict birth control policy played a significant role but it was a role that was much less crucial compared with concerns with economic constraints (Gu et al. 2007b; Wang et al. 2008; Zheng et al. 2009).

In this paper, we return to respondents who informed us of their fertility intention three years earlier. The longitudinal design of our project allows us to study the links among fertility desire intention and behavior, and reasons for low fertility. We compare our respondents' expressed fertility desire (desired number of children), fertility intention (whether intending to have an additional child) and achieved fertility outcome (whether a second child is born during the three-year period). We ask two specific questions: first, to what extent fertility desire and intention relate to subsequent fertility outcomes, and second, for to the extent that fertility desire and intention do or do not predict fertility behavior, whether there are any patterns that reflect the underlying reasons of reproductive decision making. The results we present in this paper are still preliminary for two reasons. First, due to time constraint, we are only able to use part of the whole survey data, and second, due to the timing of our follow-up survey, which is only three years after the first, our results are not final as reproductive careers of our respondents are yet to end.

Data and Methods

Study Design

Our study, Jiangsu Fertility Intention and Behavior Study (JFIBS) in Jiangsu province, China, follows a longitudinal mixed method research design. It uses both survey research and in-depth interviews. A baseline survey was carried out in December 2006, and a follow-up survey that has just been completed. The results reported in this paper are based on both waves, with only part of the data from the follow-up survey included, as we are still entering and cleaning data from the second survey that was completed only a month ago.

Jiangsu province, the research site for this study, is located in the Lower Yangtze region of China, along China's east coast. With a population of 75.5 million (end of 2006) Jiangsu is one of China's largest, and one of the most economically dynamic provinces. Geographically the southeast part of Jiangsu province surrounds China's largest city, Shanghai. Per capita GDP in 2006 for Jiangsu province (\$3500) ranked the third highest among China's 28 mainland provinces (excluding three provincial level municipalities of Beijing, Shanghai and Tianjin). Jiangsu's economy is also closely tied to the global

economy. In 2007, foreign direct investment amounted to 21.9 billion USD, and import and export reached 349.7 billion USD. Exports alone account for 60% of the province's GDP, comparing to 35% at the national level.

We chose Jiangsu not only for its economy, to study the role of economic change in low fertility, but also for its demography -- its extremely low fertility and unique fertility policy. Jiangsu's fertility is one of the lowest among the China provinces; its recorded fertility level from China's 2000 census has a TFR of 1.0. The provincial natural increase rate has been lower than 3‰ since the year of 2000. The trajectory of fertility change in Jiangsu is very similar to that of China, but with constantly a lower level (see figure 1).

[Figure 1 about here]

Unlike most other provinces in China that allow rural couples to have a second child if their first child is a girl (Gu et al. 2007a), Jiangsu is one of only two provinces (along with Sichuan province) that has implemented a province-wide one-child policy for the past three decades, requiring not only urban but also rural couples to have only one child. Such a strict policy has created an increasingly large proportion of families with only one child, which in some areas reaches as high as more than 90 percent. Jiangsu province's strict birth control policy does provide exemptions for "special circumstances." (See Appendix for the list of exemptions). As an exemption of the strict one-child policy, Jiangsu's birth control regulations allow couples to have two children if one of the marriage partners is a single child for couples with agricultural household registration (*hukou*) status and if both marriage partners are single child for those with a non-agricultural household registration (*hukou*) status. With three decades of the one-child policy, couples who are qualified to have two children are now entering their marriage and childbearing age. Another exemption is that rural couples whose first child is a girl and who also meet certain demographic and social conditions are allowed to have a second child. The couples exempted from the one-child rule are our main study subjects.

Our study population cover women aged 18 to 40 in 2006 and their household members in six counties in the east part of Jiangsu province. The follow-up study, while keeping those beyond age 40 who were included in the baseline study, extended downwards to include women who reached age 18 at the time of our follow-up study, end of 2009. The six counties were chosen based on two considerations. First, they are all in the more developed part of Jiangsu, along the east coast, and therefore forming a contiguous region of the province that has overall experienced rapid economic growth and sustained fertility decline. Second, these six counties were also chosen from three sub-regions of different economic growth levels in this part of Jiangsu province, with two counties each representing different parts of the region: Zhangjiagang (ZJG) and Taichang (TC) in the south, Haiyan (HA) and Rudong (RD) in the middle, and Dongtai (DT) and Daifeng (DF) in the north. As shown by the statistics given in Table 1, these six counties differ significantly in their economy, with per capita GDP ranging from the low in one county (RD) of only about 50% of the provincial average, to the high (ZJG) of more than three times the provincial average. These counties also differ substantially in the level of urbanization, with the two sites in south Jiangsu having over 40 percent of the population

(as represented by the percentage of young women) with non-agricultural household registration status and the rest counties all below 20 percent. Demographically, however, these six counties are much more homogeneous, with fertility (measured by TFR) at about 1.0 or even lower. In three of the six counties, net population reduction due to natural causes is already set in motion.

[Table 1 is about here]

Within each selected county, we utilized a two-stage cluster sampling design. At the first stage, a village in rural areas or a neighborhood in urban areas was used as the primary sampling unit. A weighted sampling scheme was used to randomly select 49 primary sampling units. At the second stage, every woman aged 18 to 40 in the selected units was interviewed. Trained interviewers (mainly community staff) carried out face-to-face interviews using a standardized survey questionnaire. The baseline survey lasted until after the Chinese New Year in 2007, to interview those who were out for work or school but returned home for the holiday. The recently completed follow-up survey lasted until February 2010. Most of our respondents were highly cooperative and very few refused to be interviewed. The response rate for the first survey was 92%, and the follow-up rate is also very high, over 90%. The age structure of the sample was consistent with that from the Women Information System of Jiangsu Province and with the 2000 National Census for the sampled counties.

In our baseline survey, we asked questions about reproductive preferences, desires, and intentions, which include explicit questions on general preferences of childbearing and specific questions about reproductive intention in the absence of the one-child policy. To some respondents, these questions are hypothetical. To others, these are real, as some of the young respondents are allowed to have two children under the current policy. The survey also included questions aimed at collecting individual, household, and community level data on economic changes, such as non-farming activities, migration, income, and cost of children's education. In addition, we also gathered data on individual value orientations, with some questions adopted from those used in other settings, such as in the International Social Survey Program (ISSP) and the World Values Survey (WVS).

The follow-up survey enables us to link the rich information we collected during the baseline survey on the social and demographic characteristics, fertility desire and intention, attitudes, to outcomes as shown in changes in attitudes, intentions, and/or behaviors. The youngest groups of our respondents at the time of our baseline survey in 2007 were only at the beginning of their reproductive career, and both changes in policy and in the economy may have an influence on their reproductive intention and behaviors. Even those in the middle still had several years to change their minds before it was too late to have a second child. Results from our longitudinal studies should shed light on the underlying reasons for low fertility (in this case staying with only one child), and can be used as important input for policymakers in anticipation of a possible baby boom if the policy is relaxed nationwide.

Data and Methods

In this paper, we focus specifically on women who had had only one child in 2007 and were known to qualify for a second child under the current policy. Due to time constraint in data entry and cleaning, the current paper only includes data from three of the six counties: Haian, Rudong, and Dafeng. As we have discovered in the previous study, the need to replace a deceased child or having a child from the current marriage for those remarried couples are often deemed as a necessity than a choice in Chinese culture (Zheng et al. 2009). We therefore restrict our sample to those who stayed in their first marriage over the last three years. As shown in Table 2, which provides a summary of the data used for this study, for the three of the six counties we include in this paper, there were 9,237 respondents in the 2007 baseline survey, among whom slightly over a fifth, 2,114, were qualified to have two children. Among those qualified, 1715 already had one child in 2007 and were still in their first marriage at the time of the follow-up survey.

Because the two surveys used identifiers provided by the local birth control commissions, an unexpected change in its registration system has complicated the process of linking the two waves of the surveys together. In this study, we limit our sample to only those with verified match between the two waves. Such further restrictions left us with 955 cases. To assess if there are biases associated with the matching and restrictions we imposed on this analytical sample, we compare the basic descriptive statistics based on the full sample, the sample qualified to have two children, and the restricted sample used in this analysis (also see Table 2). The restricted sample appears to be younger, less educated and more from rural communities. Such characteristics make sense, as young women in rural areas are more likely to be exempted from the one-child rule, both because of their social status (*hukou*) and demographic status. Other tests also suggest that the restricted sample is comparable to the full sample. While more conclusive judgment about sample restriction has to wait for the completion of the full-sample matching, we are confident that what is presented in this paper reflects the situation on the ground.

[Table 2 about here]

The main goals of our study, as introduced above, are to examine the links among fertility desire, intention, and outcomes. Our study follows this analytical framework treating childbearing behavior as the final outcome, and fertility desire and childbearing intention as important intermediate variables. Policy, institutional, cultural, social-economic and demographic variables are all important factors that influence people's fertility desire, intention and behavior. Although fertility is often a collective family decision, our analysis centers on women. Our analyses will primarily make use of information collected at two different levels: at individual level: education attainment, employment, income, and opinions about childbearing of the individual respondents, and at the household level: household demographic structure and economic status. We will also pay attention to other factors, such as, age at childbearing, and gender preferences (Bongaarts, 2001).

Information collected from the survey are used to answer the questions including: (1) Preferences of childbearing, such as the ideal number of children for a couple without considering government's birth control policy; (2) Childbearing intention among married women with one child who are qualified to have two under the current policy, measured by response to the question "are you considering to have another child?"; (3) Degree of certainty about having a second child, measured by response to the question "when do you plan to have the next child?" among those who were considering to have another child; and finally, (4) Reasons behind the stated fertility desire and intention among the respondents.

Results

Prevailing Norms of Low Fertility

Among couples in the part of China under our study, a norm of very low fertility has taken root. In our baseline survey, we gathered information on female respondents' fertility desire, by asking them what they consider as the ideal number of children *not considering the government's birth control policy*. The result from the over 18,000 respondents gives an average number of 1.44, lower than the national average. However, this is not a surprise given that Jiangsu is among the most developed provinces in China. Not only has its observed fertility been below the national average ever since the start of birth planning policy, it also has a long tradition of fertility control, some can be traced back to pre-revolutionary China. A more telling fact is that the average of the ideal number of children from 4,385 women who by policy stipulations are allowed to have two children is only 1.46, almost the same as those who are allowed to only have one child (Zheng et al. 2009).

Furthermore, our earlier examination of fertility intention, namely whether a woman expressed an intention to have a second child, showed that economic constrains clearly stood out as the most commonly cited reasons by our respondents for forgoing the opportunity of having a second child. Among those who qualified to have a second child but decided to forgo the opportunity, about 70 percent cited economic cost of childrearing, and 30 percent cited poverty. Similar proportions were observed among those who were only qualified to have one child under current regulation, and answered no to the hypothetical question of going for a second child. Given the rapid economic development in China and fast pace of social change, it will be interesting to find out how the changes in family and socioeconomic circumstances affect people's fertility preference and behavior.

The follow-up survey confirms the same prevailing norm of low fertility. To further differentiate the difference between cultural norm and personal preference, our follow-up survey included two questions on ideal family size: what is considered as the ideal number of children *for a general family, not considering the government's birth control policy*, and how many children would *you* like to have? The second question is specially added to gauge personal or familial preference. We present the answers to these two

questions in Table 3, with the 2010 full sample in the left panel, and the restricted sample in the right panel. For the full sample, very few (less than 1% of the total sample) chose a family size outside 1 or 2 as the ideal number. The average of ideal number of children for a general family is 1.59, and the average of personal desired family size is slight lower, at 1.34. There is a remarkable consistency between those two questions among respondents interviewed in the follow-up survey. Nearly three-quarters (73.7%) of all respondents give the same answer to both questions. The vast majority of those who provided different answers to the two questions are those who put the cultural norm at 2 children, but prefer to have only one child themselves.

[Table 3 about here]

We see a similar pattern of fertility norms among the restricted sample used for this study, namely those who had only one child by 2007, were allowed to have two children, and stayed in their first marriage over the last three years (Table 3). There is an even higher degree of correspondence between the cultural norm and personal preference. Again, of those who provided different answers to the two questions, there are many more respondents who reported two children as the ideal norm for a general family but one as their personal preference than those who reported the opposite. Given the proportion of women who qualified to have two children is only about one-third of the total sample, the similarity between the full sample and the restricted sample is clearly not driven by policy qualifications.

These numbers confirm the low fertility norm that has been firmly established in this part of China. Regardless of the policy restrictions they face, most respondents choose either 1 or 2 as their ideal number of children. Further, even among those who are allowed to have a second child, the desire to have a second child is very low. Similar to what we have discovered in the first wave, only about one-third of all respondents expressed a personal desire to have a second child.

Matching Fertility Intention and Fertility Outcomes

The central question of this paper is to understand how many of our respondents in our matched sample who moved on to have their second child in the last three years, and what differentiate them from those who have stayed with only one child. Three years ago, in the baseline survey, we asked these same respondents their fertility intention, namely whether they planned to have a second child (Table 4). Almost 70% of them firmly said no, and only 8.3% said they planned to have another child, of which only 1.9% gave a firmly “yes.” Of those who were positive about having a second child, we followed up with a question about their plan: “when do you plan to have the second child?” Most of those who gave a firm “yes” indicated that they would follow up with action soon, within the next one year or two. Those who were positive about having second child but not as firm are less certain about when they would have a second child.

[Table 4 about here]

Three years later, how many of the small proportion of respondents who expressed an intention to have a second child indeed followed up on their plans? Are there any changes in their desires or intentions? How consistent is their desire, intention and action? Answering those questions will help us understand the low fertility situation in China, and use that knowledge to predict what might happen in China should policy restrictions be lifted. In the right panel of Table 4, we provide results of cross-tabulation of fertility intention and actions among this select group of respondents. We make two important observations. First, the overall proportion of respondents who had a second child in the three-year interval is *extremely* low (only 4%, 38 out of 955). Second, fertility intention is predictive to follow-up actions, but it is not a perfect predictor. The most powerful predictor is for those who gave a firm “yes,” with 50% of them followed up with any action. For those who hesitated, the chance is much lower, although there seems to be some correlation between people’s unclear preference and their actions.

This consistency between intention and behavior, and the extremely low progression rate further confirm the low fertility norm discussed above. While it can be argued that the extremely low fertility desire for those who are restricted by the one-child rule is suppressed by the government’s birth planning policy, the low fertility desire among those who are allowed to have two children cannot be used as evidence for the same argument. For these individuals, this is clearly a choice made by individual women and their families. Policy restrictions do not apply to them. The low desire is followed up with low progression rate. It is also possible that there is also a gap between desired family size and achieved family size, i.e. unmet demand, just like what has been observed in other low fertility societies.

Why Not a Second Child?

It is clear that an overwhelming majority of women of reproductive age in our study sites have adopted a very low fertility norm, and have expressed no intention to have a second child. It is also clear that fertility behavior did not match up even such a low fertility norm, as only a minuscule 4% of all who were not restricted by China’s one child policy went on to have a second child during a three-year time period. To better understand the reasons of the prevailing low fertility, we would still like to know what the driving forces are behind the revolutionary change of fertility norms in China. The most commonly cited reasons found in our baseline study were economic concerns (Zheng et al. 2009). In 2010, the pattern of reasons among our restricted sample stayed virtually unchanged in comparison to the full sample in 2007. As shown in Table 5, among the several pre-selected reasons given to respondents, the overwhelming majority chose in 2010, as in 2007, “one child is good enough” and “cost too much” as the most important considerations. Our ethnographic fieldwork following the baseline survey revealed that for most respondents who answered “one is enough,” their explanations were that raising a second child involved too much resource and time commitment from the parents. A third of all respondents in 2010 also chose “following the government policy” as a reason (respondents can choose as many answers as they want), believing that their own actions of birth control benefit the larger society as well. Note that the questions of concerns for future cost of childbearing are different from that of current economic constraints, which

means more concretely that the couple feels that they do not have the resources currently to have a second child.

[Table 5 about here]

The difference between cultural norm and personal preference is also suggestive to the social forces behind the change. In our field interviews, at several occasions, when we followed up with the apparent discrepancy between the expressed social norm of the ideal number of children and a personal choice to stay with only one child, our respondents often came back with specific reasons such as “my child is doing great, I want to concentrate all our efforts and resources on him/her to make sure his/her success.” What Coale (1973) calls the “conscious calculation” in fertility is remarkably clear.

At the risk of over-analyzing and over-interpreting the data we have in hand, as we only have less than 4% in our sample who moved on to have a second child, we would like to explore further who are the minority individuals or families that chose to have a second child. We do so by carrying out several logistic regression analyses to include some important socioeconomic variables to see if the pattern we have seen persists, especially when several factors are taken into considerations simultaneously. The dependent variable used is whether a respondent had a second child in the three-year study period, with those who had a second child coded as 1 and those who stayed with one child as 0. We show results for several models. In Model 1, we only include the demographic and socioeconomic background variables: age, educational attainment, household relative income ranking in the community, and sex of the first child. Residence type is also included in this model, as residents in urban areas face a more restrictive policy. In Model 2, we add the variable of fertility desire, measured by the desired number of children reported three years ago, to examine the role of fertility desire in fertility outcomes. Finally, in Model 3, we introduce our measure of fertility intention, measured by the respondent reported plan to have another child in the baseline survey three years ago. By having both fertility desire and fertility intention in the same analytical model, we seek to explore the role of fertility intention in comparison to fertility desire in affecting reproductive outcomes. To minimize the number of missing cases and empty cells in our logistic regression analysis, we combined some categories together. Along with adjusted probabilities based on the regression models, we also include unadjusted probabilities of having a second child in three years in Table 6. .

[Table 6 about here]

Results in Table 6 contain some useful information that may guide our understanding of low fertility and its prospect in China. Comparing the characteristics of those who stayed with one child and who continued to have two children reveals further information on the underlying reasons of low fertility, or the absence of it (measured by having had a second child). First, most Chinese women complete their childbearing at a relatively young age. As shown in all models in Table 6, for having a second child, which for most if not all couples in this part of China is also the last child, late 20s and early 30s seem to be the most likely age. After that, the likelihood of having a second birth drops significantly,

even among those who expressed a clear intention to have a second child. The implication of such an age pattern for future fertility is that once passed the mid-30s, future childbearing is not very likely.

Second, educational and economic measures as we use here for this sub-sample do not seem to have a significant effect on whether a couple have a second child. The educational differentiation in respondents' behavior, although not statistically significant, contradicts what we found in our previous studies that middle-school educated individuals tend to have low fertility intention compared with the most educated category. A careful examination (not presented here) suggests that the discrepancy is mainly driven by those college-educated who had no children yet in 2007. What they had expressed was more a liberal ideal than a personal choice.

Third, having that second child is still driven by a cultural force, namely the desire to have a son. In our baseline study, we found that those whose first child is a girl were more likely to express an interest not to stay with one child, as Chinese families traditionally prefer to have at least one boy to carry on the family lineage and to provide for old age support. The sex preference is incorporated in the birth control regulations as well, as there are several exemptions for those whose first child is a girl. Among our restricted sample, of those who are qualified to have two children, such policy allowance is reflected. As shown in Table 2, about 58% of women in our sample have a first child as a girl. The son-preference is also shown in the comparison between those who stayed at one child and who had a second child. While the statistics presented confirm the existence of son preference with those whose first child is a girl more than twice as likely to have a second child as those whose first child is a son, the probability of moving on to have a second child among those with only a girl is nevertheless very small, at only 5.2% in the three years. When other factors are taken into consideration, the contrast stays about the same, as indicated by the adjusted probability. Such a son preference, it should be noted, is no longer prevalent but exists only among a portion of the population.

Fourth, while fertility desire, measured by the reported ideal number of children, seems to play some role in affecting fertility behavior, it is *not* a useful predictor of fertility behavior. Rather, a better way to predict behavior is to use a measure of fertility intention, as we have done in this study, that measured concretely the individual or the couple's intention to have another child. Individuals who made up their minds to have another child are more than 20 times more likely to have an additional birth compared with those who decided not to have another one. Once fertility intention is introduced in the model, as shown in our analysis, ideal number of children no longer has a significant role (Model 3, Table 6).

Conclusion

Low fertility has emerged as a global phenomenon with profound social, economic, and political implications. Such a trend, moreover, is no longer limited to the economically developed countries that experienced fertility decline in the first half of the twentieth century or even earlier. It has extended to countries that have experienced recent fertility

decline, and countries that have a standard of living far below that of the developed world. China is such a country. Two decades of below replacement fertility in China has already set in motion an accelerated aging process and an inevitable population decline in the future in this world's most populous country. Yet, a government sponsored one-child policy has been in place for three decades, with its continued existence in part based on a understanding that has not taken into account of the profound changes in people's reproductive behaviors and the underlying forces driving them.

Our study of fertility desire, intention, and behavior in a region of China that has been undergoing rapid economic and social transformations reveals an unmistakable prevalence of a very low fertility norm, with virtually no individuals wanting to have more than two children, and with an average ideal number of children as low as only 1.34. Such a preferred number is reported by women who are allowed to have two children by the current government birth control policy. Moreover, even among individuals who expressed an interest in having a second child, or who supported the traditional norm of two children, in reality most of them stayed with only one child. During a three-year observation period, only 4% of nearly 1,000 women who are eligible to have a second child did so. While a longer observation period may well allow more second parity births in our study population, it is hard to imagine that the share of women who will have two children will be more than 30%. Both the low fertility norm and its associated fertility behavior challenge the conventional wisdom that China's very low fertility is mostly due to the restricting effect of the government birth control policy.

At the same time, our study also shows that in contrast to fertility desire, as measured by the stated ideal number of children for a family, fertility intention is a much more useful indicator in predicting individuals' fertility behavior. Although fertility intention is neither a necessary nor a sufficient condition to predict whether a couple moves on to have a second child in a three-year time period, as shown in our study, it is nevertheless a very powerful predictor. The implication of such a finding is that in studying low fertility, better measures than the general fertility desire need to be used. Fertility intention as we have experimented with this study is such a candidate.

China's low fertility regime also shows a pattern that varies significantly from many other settings. In most below replacement fertility countries, there is a bifurcation of fertility behavior, i.e. a large proportion of people choose (or be forced) to stay unmarried and childless while at the same time there are many others who have two or more children. In China, a norm of universal marriage is still the predominant rule, and so is a predominant norm of the one-child per family. Such a one-child norm may be traced to the implementation of the one-child policy in the past three decades that often featured relentless propaganda campaigns and punishments, but it has also been noted that a cultural shift from rejecting to accepting even to embracing such a norm has taken place (Zhang 2005). For Chinese couples who are still under the one-child rule, many view having a second child as a social privilege. However, such a privilege may well be linked more to matters of choices, rights or freedom, not so much to their own intention let alone behavior. The answer to the question of "why stop at one" seems to be that a one-child

norm, driven in part by parents' concerns over the cost of rearing children, has taken root among many Chinese couples.

What can be said about the prospect of China's emerging low fertility regime? If our study offers any hint, China's low fertility, at least in our study region, is unlikely to experience any upturn in the short run. In our recently completed survey, we asked the same fertility intention questions as we did three years ago. In our restricted sample, among 905 respondents who have only one child at the time of the survey and are allowed to have two children, only 23 (2.54%) gave a definite "yes" to the idea of having a second child, while 66% gave a firm "no."² Among those who expressed an intention to having a second child, only about half plan to do so in the next two years or sooner. In the full sample, the pattern is similar. If the findings based on our results of the last three years are of any guidance, we can safely predict that these respondents' fertility will never reach the desired family size they answered in surveys, of close to two children per family, not to mention the limit imposed by the current government birth planning policy. With such a prevailing norm of low fertility and of behavior not living up to desire or even intention, the government's continued birth control policy has long lost its reason for existence in this part of China.

² 12 cases did not answer this question.

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**Table 1 Demographic and Economic Profile of Study Counties
Jiangsu Province, China**

| County* | ZJG | TC | HA | RD | DT | DF | Province |
|--|------------|-----------|-----------|-----------|-----------|-----------|-----------------|
| Pop. in 2006 (in thousands) | 887.8 | 461.4 | 950.5 | 1,071.4 | 1,153.4 | 729.2 | 75,495.0 |
| Number of births in 2006 | 6,074 | 2,474 | 5,285 | 5,929 | 7,913 | 6,391 | 703,100 |
| Natural growth rate in 2006 (‰)** | 0.18 | -2.40 | -0.54 | -2.55 | 0.08 | 1.71 | 2.28 |
| Proportion of single-child (%)*** ¹ | 42.28 | 53.96 | 75.18 | 79.95 | 66.94 | 72.86 | 47.18 |
| Proportion of non-agricultural women age 20-45 (%) ² | 32.91 | 43.32 | 18.26 | 14.28 | 13.14 | 19.17 | — |
| TFR (2000) ³ | 0.84 | 0.81 | 1.03 | 1.01 | 1.01 | 0.98 | 0.97 |
| Proportion of 0-14 pop. (%) ³ | 16.48 | 13.10 | 17.40 | 16.28 | 17.68 | 16.75 | 19.63 |
| Proportion of 65+ pop. (%) ³ | 9.27 | 12.15 | 12.40 | 13.47 | 10.69 | 9.01 | 8.84 |
| Rural net income per capita, in 2006 (USD) | 1166.2 | 1164.7 | 740.1 | 679.9 | 779.9 | 768.2 | 729.2 |
| GDP per capita in 2006 (USD)**** | 11951.0 | 10008.9 | 2338.2 | 1918.6 | 2115.5 | 2570.4 | 3614.5 |

Notes:

*: ZJG—Zhangjiagang, TC—Taicang, HA—Haian, RD—Rudong, DT—Dongtai, DF—Dafeng.

** : Natural rate of increase is the difference between birth and death rates.

*** : Defined as percentage of single-child in population aged 0-30;

**** : GDP per capita and rural net income per capita is calculated based on the exchange rate of USD 100 = RMB 797.18.

Data sources:

1. 2005 Population Sampling Survey.
2. Jiangsu Women Information System.
3. 2000 census summary data by county; others are from 2007 *Jiangsu Statistics Yearbook*.

Source: Zheng et al. 2009.

Table 2. Summary of Data, 2007 and 2010 Surveys, Jiangsu Province, China

| | 2007 Full Sample | | Sample | | 2010 Restricted | |
|---------------------------------|------------------|------|----------------|------|-----------------|------|
| | | | 2007 Qualified | | | |
| Age (Jan. 2007) | | | | | | |
| 25- | 2,222 | 24.1 | 632 | 29.9 | 284 | 29.7 |
| 26-30 | 1,812 | 19.6 | 768 | 36.3 | 408 | 42.7 |
| 31+ | 5,203 | 56.3 | 714 | 33.8 | 263 | 27.5 |
| Education | | | | | | |
| Primary or less | 988 | 10.7 | 216 | 10.2 | 92 | 9.6 |
| Middle School | 4,979 | 53.9 | 1,312 | 62.1 | 606 | 63.5 |
| High School + | 3,270 | 35.4 | 586 | 27.7 | 257 | 26.9 |
| Sex of First Child | | | | | | |
| No Child | 1,810 | 19.6 | 189 | 8.9 | | |
| Male | 3,789 | 41.0 | 780 | 36.9 | 397 | 41.6 |
| Female | 3,638 | 39.4 | 1,145 | 54.2 | 558 | 58.4 |
| Social Class | | | | | | |
| Rich | 1,754 | 19.0 | 497 | 23.5 | 239 | 25.0 |
| Average | 6,538 | 70.8 | 1,452 | 68.7 | 659 | 69.0 |
| Poor | 941 | 10.2 | 164 | 7.8 | 57 | 6.0 |
| Ideal Number of Children | | | | | | |
| One | 5,592 | 60.5 | 1,224 | 57.9 | 581 | 60.8 |
| Two | 3,643 | 39.4 | 890 | 42.1 | 374 | 39.2 |
| Community Type | | | | | | |
| Rural | 5,166 | 55.9 | 1,484 | 70.2 | 753 | 78.9 |
| Urban | 4,071 | 44.1 | 630 | 29.8 | 202 | 21.2 |
| Total | 9237 | | 2114 | | 955 | |

Notes: “2007 Full Sample” refers to the full sample from the 2007 survey. “2007 Qualified” refers to those qualified to have two children in the 2007 survey. “2010 Restricted” is the restricted sample used in this analysis.

Table 3: Ideal Number of Children: Cultural Norm and Personal Preference, Jiangsu Province, China 2010

| | | Personal Preference | | | |
|----------------------|----------|--------------------------------|------|--------------------------------|------|
| | | % of 2010 Full Sample (N=9764) | | % of Restricted Sample (N=955) | |
| | | 1 | 2 | 1 | 2 |
| Cultural Norm | 1 | 41.6 | 0.9 | 42.4 | 1.5 |
| | 2 | 24.3 | 32.1 | 19.2 | 35.8 |
| Total | | 66.2 | 33.5 | 61.8 | 37.5 |

Table 4 Intention to Have a Second Child and Fertility Outcomes in a Three-Year Follow-up Period, Jiangsu Province, China, 2007 and 2010

| | Fertility Intention: Plan to have a second child | | Fertility Behavior: Had a second child in 3 years | |
|-------------------|---|------------|--|---------------|
| | Freq | % of Total | Freq | % of Category |
| No | 667 | 69.84 | 16 | 2.4 |
| Likely No | 62 | 6.49 | 2 | 3.2 |
| Not Sure | 147 | 15.39 | 8 | 5.4 |
| Likely Yes | 61 | 6.39 | 3 | 4.9 |
| Yes | 18 | 1.88 | 9 | 50.0 |
| Total | 955 | 100 | 38 | 4.0 |

Table 5. Reasons for Not Wanting a Second Child, Jiangsu Province, China

| Reasons for Not Having a Second Child | Sample | |
|---------------------------------------|----------------|-----------------|
| | 2007 Qualified | 2010 Restricted |
| Uncertainty/Future Concerns | | |
| One Is Good Enough | 78.5 | 79.7 |
| Cost Too Much | 73.6 | 69.9 |
| Resource Constraints | | |
| Current Economic Status not Good | 32.4 | 35.5 |
| Not Enough Energy | 28.8 | 18.3 |
| Policy | | |
| Following Gov.'s Call (Policy) | 39.1 | 36.7 |
| Everyone Else Has Just One | 4.3 | 4.4 |
| Other | | |
| Health Concern | 3.1 | 5.2 |
| Too Old | 10.3 | 12.5 |

Table 6 Unadjusted and Regression Adjusted Probability of Having a Second Child in Three Years, Jiangsu Province, China

| Variable | N | Unadj. Prob. | Logistic Regression | | | | | |
|---------------------------------|-----|--------------|---------------------|-------|------------|-------|------------|-------|
| | | | Model 1 | | Model 2 | | Model 3 | |
| | | | Adj. Prob. | P-Val | Adj. Prob. | P-Val | Adj. Prob. | P-Val |
| Age (Jan. 2007) | | | | | | | | |
| 25- | 284 | 3.2 | 3.7 | | 3.6 | | 3.4 | |
| 26-30 | 408 | 5.9 | 6.4 | 0.142 | 6.2 | 0.138 | 6.1 | 0.105 |
| 31+ | 263 | 1.9 | 1.5 | 0.108 | 1.6 | 0.145 | 1.7 | 0.194 |
| Education | | | | | | | | |
| Primary or less | 92 | 3.3 | 3.2 | | 3.2 | | 3.5 | |
| Middle School | 606 | 5.0 | 4.8 | 0.512 | 4.8 | 0.493 | 4.6 | 0.598 |
| High School + | 257 | 1.9 | 2.2 | 0.592 | 2.1 | 0.576 | 2.4 | 0.591 |
| Sex of First Child | | | | | | | | |
| Male | 397 | 2.3 | 2.2 | | 2.4 | | 2.6 | |
| Female | 558 | 5.2 | 5.3 | 0.019 | 5.1 | 0.040 | 4.9 | 0.079 |
| Social Class | | | | | | | | |
| Rich | 239 | 6.3 | 5.4 | | 5.0 | | 4.5 | |
| Average | 659 | 3.0 | 3.2 | 0.116 | 3.3 | 0.220 | 3.5 | 0.434 |
| Poor | 57 | 5.3 | 5.8 | 0.920 | 6.3 | 0.701 | 6.4 | 0.538 |
| Community Type | | | | | | | | |
| Rural | 753 | 4.6 | 4.5 | | 4.6 | | 4.4 | |
| Urban | 202 | 1.5 | 1.7 | 0.102 | 1.6 | 0.076 | 2.0 | 0.158 |
| Ideal Number of Children | | | | | | | | |
| One | 581 | 2.6 | | | 2.6 | | 3.4 | |
| Two | 374 | 6.1 | | | 6.0 | 0.013 | 4.6 | 0.374 |
| Intention | | | | | | | | |
| No | 667 | 2.4 | | | | | 2.6 | |
| Likely No | 62 | 3.2 | | | | | 3.8 | 0.613 |
| Not Sure | 147 | 5.4 | | | | | 4.5 | 0.244 |
| Likely Yes | 61 | 4.9 | | | | | 3.6 | 0.640 |
| Yes | 18 | 50.0 | | | | | 36.6 | 0.000 |
| Total | 955 | 4.0 | 4.0 | | 4.0 | | 4.0 | |

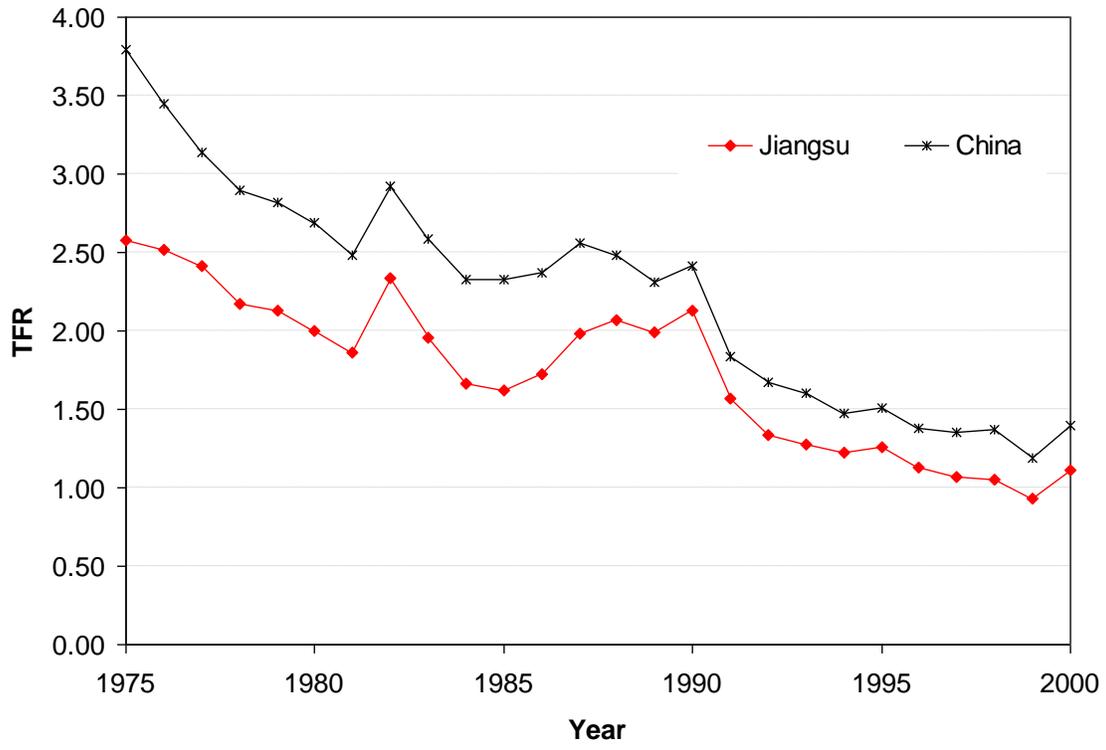


Figure 1 Total fertility rates of Jiangsu and China, 1975-2000

Data source: National Bureau of Statistics of China and East-West Center. 2007. Fertility Estimates for Provinces of China, 1975-2000

Appendix. Exemptions for Having a Second Child Listed in *Jiangsu Population and Family Planning Regulations (2002)*

Article 22. Couples meet one of the following criteria may file for permission for having a second child from township government:

1. The first child has been medically diagnosed as handicapped.
2. One side of the couple is a veteran with 2nd degree disability, or is the only child of a martyr.
3. One side was a widow, and the other side has no child.
4. One side was divorced and has only one child from the previous marriage, the other side has no child.
5. Both sides have no child by birth, and become pregnant after legal adoption.
6. One side is from a family with two generations' of single-child, or both sides are single child.
7. One side have been working in underground mining continuously for 5 years, still working in underground mining, and the first child is a girl.

Article 23. In addition to the exemptions listed in the Article 22, couples with wife as a rural resident, meet one of the following criteria, may file for permission for having a second child from township government.

1. One side is a single child
2. Husband's brother(s) could not have child.
3. Husband joins wife's family and supports wife's parents, and the first child is a girl. (Only applicable to one of wife's siblings.)
4. Husband has no brothers and has only one sister, and the first child is a girl.
5. Living in reclaimed coastal areas with a village average of arable land more than one acre per person, the first child is a girl.
6. One side has been working in ocean fishery for more than 5 years, and still working in ocean fishery, and the first child is a girl.
7. Both sides work in agriculture, with certified non-hereditary first degree disability or second degree limb disability, and the first child is a girl.

Article 24. Couples in other special circumstances not specified above applying for permission for a second child will require sanction from prefectural-level birth planning commission, and need to be registered with the Provincial Birth Planning Commission of Jiangsu.

Article 25. Overseas Chinese who have returned to live in the mainland for no more than 6 years, having only one child or all of their children do not live in mainland, may file for permission for having a second child.