Globalization, Policy Intervention, and Reproduction: Below Replacement Fertility in China[*]

GU Baochang, Renmin University of China, China
ZHENG Zhenzhen, Chinese Academy of Social Sciences, China
WANG Feng, University of California, Irvine
CAI Yong, University of Utah

(Paper prepared for presentation at the Population Association of America annul meeting, New York City, March 29-31, 2007)

Introduction: China and the Global Low Fertility Regime

At the turn of the twenty-first century, below replacement fertility has become a new global demographic reality. More than a half of the world's population, mostly living in the world's wealthiest societies, are now under such a new demographic regime (Wilson 2004). In Europe, North America, and East Asia, prolonged below replacement fertility has already set in motion a negative population growth momentum (Lutz, O'Neil and Sherbov 2003). In the most extreme cases, such as Italy in Europe and Japan in East Asia, national population size could be reduced by half in as short as forty years or so from now if the current rate of reproduction persists (Morgan and Taylor 2007). A gradual but substantial reduction in population size, especially with a concomitant population aging in these richest countries in the world, constitutes an unprecedented tectonic change that is redefining the global demographic, economic, and political landscape.

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. In the last decade of the twentieth century, China's national fertility has firmly dropped to the below replacement level. China's most recent national census obtained a national fertility level of 1.22 children per woman in the year 2000. With adjustment of underreporting, fertility level measured by the total fertility rate (TFR) is believed to be around 1.5 (Cai 2005; Guo and Chen 2007; Retherford et al. 2005; Zhang and Zhao 2006). In China's more developed regions, fertility has been even lower for more than a decade, barely above the one child per couple level.

China, however, is often conspicuously missing in the literature on below replacement fertility. This is in part because of China's recent status in reaching below replacement fertility level and in part because of the lack of reliable fertility data in the last decade and half (Scharping 2007; Zhang and Zhao 2006). But it could also be due to a

[*] We express our deep gratitude to the support from Jiangsu Provincial Population and Family Planning Commission of China, the Ford Foundation and the John D. and Catherine T. MacArthur Foundation.

misconception that China is in the “other” category, largely due to a continued presence of strong government intervention and control in reproduction. Low fertility in China, in other words, has not been viewed as part of the global below replacement fertility regime.

We suggest in this paper that China's low fertility not only has profound implications for the demographic future of the world, but also 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, two of which 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 1995). Both forces, as we argue in the following, need to be examined under the broad context of the recent wave of globalization. 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.

For China, however, there is also a third complicating factor that could not be ruled out in understanding its below replacement fertility. This is China’s ongoing strong government intervention and control in reproduction. China has not only been at the forefront of the new wave of globalization, but has also been under a continued strong state intervention in reproduction in the form of a nearly three-decade long birth control policy. China’s transition from high to low and now to below replacement fertility has differed in fundamental ways from that in other societies, mainly because it has been under the heavy hands of the Chinese state (Greenhalgh and Winckler 2005; Lee and Wang 1999). Launched as an emergency policy to put a hard brake on China’s population growth nearly three decades ago, China’s one child per couple policy continues to encompass nearly two thirds of all Chinese couples today (Gu et al. 2007). A well established government bureaucracy, from the highest level of the government down to rural villages and urban neighborhoods, is devoted to routine surveillance and enforcement of the birth control policy. Continued presence of such an unprecedented state intervention in human reproduction makes it hard to disentangle the influence of China’s changing economy on fertility intention and behavior of the Chinese population.

Whereas not a few believe that China’s current low fertility level is due largely to China’s new institutional environment of reproduction (e.g. Wang and Mason forthcoming), empirically there is little systematic examination and evidence to assess and to differentiate the role of a rapidly changing economic and social context vis-à-vis that of the birth control policy. Despite repeated surveys in China reporting that most Chinese couples would be content with only two children, such survey

results can be quickly dismissed due to the lack of a realistic alternative, namely that reported reproductive desires are constrained by a policy environment in which the majority of couples are not allowed to have two children. As China's one-child per couple policy turns to its thirtieth anniversary in a couple of years, voices have also been heard increasingly about the need to phase out such an unprecedented state policy (e.g. Cai and Gu 2006; Wang 2005; Zeng et al. 2006). A view held by many especially among Chinese policymakers, however, is that the perceived change in reproductive values is masked by the presence of the birth control policy, and that the one-child policy is still necessary and crucial in maintaining China's low fertility level. A serious and reasonable concern is a massive fertility rebound in the event of lifting the one-child policy.

In the following, we first review existing theoretical interpretations of below replacement fertility, with a special effort to incorporate different interpretations in a more general context, which is the recent wave of globalization. We argue that the low fertility regime emerged in China and elsewhere cannot be understood out of the new global political economic context that has formed in the last few decades, and that has profound implications for human reproduction. China is different, but it is not that different to be a category itself. China, in other words, is not a mythical "other" in the emerging global regime of below replacement fertility. With China's economy rapidly integrated into the new world economy, what is occurring in China in the sphere of reproduction resembles largely what has happened and what is happening elsewhere in the world. Based on such discussions of globalization and reproduction, we examine the separate roles of economic pressure and value changes that are both parts of the new global economic and cultural environment, and the role of birth control policy, which is unique for China, on fertility preference and fertility desire/intention. Our empirical examinations are based on recently collected data from Jiangsu province of China, one of the economically most dynamic regions in the world, and a region with both very low fertility and a continued presence of strong government policy of fertility control.

Globalization and Reproduction

Thanks to the work of demographers, we have a clear understanding of the demographic mechanisms of the low fertility regime. By decomposing low fertility into tempo/period versus cohort effect/behavior, demographic research has identified that a substantial share of the recent very low fertility is due to postponement in marriage and childbearing (Bongaarts and Feeney 1998; Guo and Chen 2007). Such work helps identify an important underlying mechanism of the demographic process, namely people are postponing their reproduction (in addition to changes in marriage). It does not, however, offer an ultimate explanation or answer to questions such as why people are postponing their childbearing and how long such a postponement might be.

A copious literature has also emerged that offers more social-institutional, economic

and cultural interpretations of below replacement fertility (see Morgan and Taylor 2006 for a review). Many in this investigation have focused on the role of increased cost of childbearing and childrearing, both in terms of direct cost and indirect cost, such as education cost and opportunity cost. Delayed marriage and childbearing, which may result in not only low but also no fertility, have often been linked to difficulties in the labor market, as evidenced in high unemployment rate in some countries (Kohler et al. 2002). Others lay blame on the retrenchment of the state in funding social welfare programs, especially those designed for childcare and maternity leave (e.g. Esping-Andersen 1999; McDonald 2002). Still others cite changes in employment especially employment among women, and the lack of progress in gender equity, as the root source (McDonald 2000). Such explanations can be categorized under the label of "economic constraints," as best summarized by Caldwell and Schindlmayr, that the low fertility is caused by "… a global economy governed by liberal economics creating a high degree of economic individual insecurity may be incompatible with societal replacement." (2003, 257)

The same process of global low fertility has also been viewed from a very different perspective, focusing on ideational changes among individuals. In a number of studies, researchers have shown how individual values toward sex, cohabitation, marriage, and family have changed over time, and how such changes in individual value orientation are associated with variations in marital and fertility outcomes (e.g. van de Kaa 1987; Lestaeghe 1995).

There is however often a disjunction between theories focusing on individual volition, behavior, and those focusing on structural constraints, and a lack of systematic examination of competing hypotheses or explanations of low fertility within a single study. Moreover, for those who focus on cultural change and resort to self-fulfillment of the young as the ultimate explanation, the empirical ground for such an explanation comes largely from societies with a western and individualistic tradition (e.g. van de Kaa 1987; Lestaeghe 1995). After all, a single model based on one set of explanation poses too many problems and fails to account for the very low fertility observed in different regions of the world, as shown by the review of Caldwell and Schindlmayr (2003). In the following, we make an attempt to understand low fertility under the broad rubric of globalization, by incorporating several existing interpretations of low fertility and by using a non-western country, China, as an example.

The most immediate and important global political economy context of below replacement fertility, especially the very low fertility, is the new wave of capitalist economic expansion under the general characterization of globalization. The hallmark of this recent wave of globalization, in part emboldened by the collapse of socialism during the closing decades of the twentieth century, is a free market ideology that espouses the economic idea of a self-regulating market, dismisses the redistributive role of the state, and endorses a social doctrine of social Darwinism of "survival of the fittest" (Mittleman 2000; Stiglitz 2002).

In what specific ways, however, is globalization linked to the emerging global birth dearth? We believe the following characteristics of the globalization are intimately linked to human reproduction. First, the recent globalization wave has been accompanied by a widespread increase in inequality (Alderson and Nelson 2002; Cornia 2004). The new global economy, featured by the expansion of the service sector, increasingly rewards the few at the top at the cost of the masses at the bottom (Evans and Stavegeig 2006). The service sector is extremely diversified, with some in financial centers/new technological areas reaping much of the material rewards while leaving many others (fast food services and retails, e.g.) hard to make ends meet. Increasing share of low-paying jobs means more individuals cannot afford housing, childcare, education, and perhaps most importantly, time. With increased inequality, we would expect fertility intention and behavior to vary by social and economic class, with a U shaped relationship between economic resources and fertility. Those at the lower end are pressured but have little to lose, whereas those at the upper end of the income distribution are those who can afford. The most squeezed are the ones in the middle, who face the highest opportunity cost of marriage and childbearing.

Second, the recent wave of globalization is also characterized by an increased demand for skilled labor. As low-end manufacturing jobs are being phased out and the money is being made in the new tech sectors, more skills and a higher level of education are needed to obtain a decent income or even to land on a job. Young people are concerned with their own catching up with latest technological skills and are equally if not more concerned with investing in their children's education in an increasingly competitive environment. This perception of escalating educational cost serves as a deterrent discouraging young people from getting married and having children. We expect that the deterring effect is especially pronounced among those who have the least ability to pay.

Third, the recent decades have seen a gradual but sustained retrenchment of social welfare support, as seen in the cutting of medical and pension benefits in many societies. Weakening social safety net has consequently increased the uncertainty and cost for young people to have children, as noted by many authors. In an environment where child care support is scarce, fertility intention should also be low.

Fourth, an increasingly global economy also means increased labor mobility. Jobs are increasingly located where the capital is. As capital flows more freely, so does labor, with a higher frequency. Migration has multiple effects on marriage and childbearing, including increased difficulty in finding a spouse, maintaining a marital relationship, prolonged separation of spouses and other uncertainties associated with a life on the move.

Fifth, a globalizing economy has also contributed to a more prominent global materialistic culture that seeks for instant gratification. Family values and the

importance of having children are being replaced by a new culture of insatiable material wants and possession. In addition, governments and global organizations have poured in billions of dollars in the last four decades to promote family planning and low fertility. An anti-natalistic culture is now deeply rooted in many parts of the world.

Combined, these and other forces of globalization have created a new global political and economic environment that is largely unfriendly if not hostile to reproduction. High fertility is reviewed as a sign of ignorance and backwardness. Having children is increasingly more costly, and reproduction now shows a pattern of inequality that increasingly mirrors the economic inequality. In our current study, we are able to examine several, not all, of these forces of globalization as well as the role of government policy on reproduction. Our hope is that through such an effort we can better link the two global processes, production and reproduction, within a single analytical framework.

Research Design and Data Sources

We focus on the roles of three potential forces in driving China's emerging low fertility: economic constraint, individual value orientation, and government policy intervention. The first two forces, as discussed above, are situated within and resulted from the globalizing political economy context. We use two measures of low fertility: fertility ideal and fertility desire/intention. Fertility ideal is measured by ideal number of children among all the respondents included in our study. Fertility desire/intention is more concrete, measured by a desire of having a second child of all married respondents, by an intention to having a second child among those who are allowed to have a second child under the current Chinese birth control policy in our study population.

The research site we chose is Jiangsu province, in the Lower Yangtze region of China, along China's east coast. Jiangsu province, with a population of 75.5 million (end of 2006) is one of China's largest, and one of the most economically dynamic provinces. Geographically the east 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).

We chose Jiangsu not only for its economy, to study the role of globalization, but also for its demography -- its extremely low fertility and unique fertility policy -- to study the role of policy intervention. Jiangsu is one of only two provinces (along with Sichuan province) that implemented a province-wide one-child policy for the past two and half decades, requiring not only urban but also rural couples to have only one child. Its recorded fertility level from China's 2000 census is also among the very lowest: a TFR of 1.0. Jiangsu province's strict birth control policy also contains a

benign side for couples in this province. As a measure of policy transition to phase out the one-child policy after one generation, provincial birth control regulations allow newly married couples to have two children if one of the marriage partners is a single child her or himself in rural areas and if both marriage partners are single child in urban areas.[1] With two and half decades of the one-child policy, couples qualifying for having two children are now entering their marriage and childbearing age. These couples are our main study targets.

Our data collection is taking place in six selected counties along the east coast of Jiangsu province, with two counties each representing different levels of economy in this part of Jiangsu (south, middle, and north, with the north part being the least developed among the three). This survey is the first wave of a longitudinal study planned for this research site. A multistage, random cluster process was used to draw a sample in each of the counties. The primary sampling unit is village in rural area and neighborhood in urban area. A weighted sampling scheme was used to randomly select primary sampling unit. We interview every women aged 18 to 40 in the selected units. In this paper, we use data collected from two of the six counties in the study, with a sample of 5,821 women aged 18 to 40 from 17 communities.[2] The number cases (N) reported here are not adjusted, but all summaries statistics, such as percentage, mean, standard deviation and regression results are properly weighted by sampling probability. In addition to the survey using standardized questionnaires, we have also planned focus group and in-depth interviews in these study sites.

In our survey, we asked questions about reproductive preferences and desire/intentions, which include explicitly questions on general preferences of childbearing and specific questions about reproductive desire/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 only children themselves. Under the current policy, they are allowed to have a second child if they wish so. 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).

Economic Change, Individual Values, and Low Fertility Desire

Our study areas are clearly showcases of China’s recent economic transformations. Less than two decades ago, most of the population living in the two counties in our

[1] The determination of rural and urban is based on the wife’s *Hukou* (official household registration) status.

[2] Eventually our survey will be carried out in 90 communities in these six counties. Altogether we expect to have over 20,000 completed interviews.

study relied on agricultural production as the main source of income. At the end of 2006, about two third of our respondents were still official classified as "rural residents" according to the official status of their community known as "villager groups" and "resident groups," with the former signifying a rural status and the latter an urban status. Yet, distribution of household registration status, a status that reflects economic and social designation under socialism, reveals that no more than a quarter of our respondents having a non-agricultural (urban) household registration status. This means that prior to economic transformations that started roughly two decades ago, the majority of our respondents, 75 percent, were of rural origin.[3] As shown in Table 1, at the time of our survey, about two-third of the respondents still carried an "agricultural" household registration status. The remaining two categories are more telling of recent changes: with about 7.9 percent living in newly urbanized small towns[4] and about 1.5 percent whose *Hukou* are yet to be determined because of migration[5].

[Table 1 about here]

Economically, at the turn of the twentieth century our study population is anything but rural. Among female respondents who are aged 18 to 40, participation in the labor force is very high, with over 80 percent working at the time of the survey.[6] Only a small share of them, 18.1 percent, was in the agricultural sector, whereas the largest share, about 50.3 percent, were working in the manufacturing sector. The share of these women working in the low-skill service sector also exceeds that in the agricultural sector, with 20.8 percent of all respondents. The other 10.7 percent were working in the professional white-collar jobs.

Information on the husbands of married women in our sample (81.4 percent of all respondents), also shown in Table 1, shows a picture that is similar to female

[3] This is a conservative estimate. At least some of the 25 percent of respondents who had an official "urban" *Hukou* at the time of the survey had their household registration status changed from agricultural to non-agricultural in the last two decades.

[4] "Town" *Hukou* is a newly developed category in China's *Hukou* system. This designation applies mostly to peasants who move to newly urbanized areas. This new category carries some, but not all the benefits associated with the "Urban" *Hukou* status. In our study, virtually all the "Town" *Hukou* holders are in county #2, which has a much faster pace of urbanization than county #5.

[5] Generally speaking, there are two large categories of migrations: those involve reclassification of official *Hukou* records, and those do not. The first category applies to government sanctioned job assignment and some marriage related relocations. The second category is much broader: covering anyone who has left their official *Hukou* registration place for more than 6 months. The migrants in this study are of the first category. We will have a special sample for migrants of the second category when the whole survey is completed.

[6] Among those unemployed at the time of the survey, about 37% were at school, 43% were housewives, only about 17% fall under the conventional definition of unemployed—those who were in the job market looking for job.

respondents in general, except with a higher level of labor force participation and a higher frequency of migration. Husbands had an even higher labor force participation rate, with 97.9 percent currently working, and an even more complete transformation away from agriculture. Only 4.1 percent of these men were still employed primarily in agriculture, whereas 55.0 percent were in manufacturing and construction, and nearly 29 percent in low-skill service. The rest (11.5 percent) worked in professional or white-collar sector.

Economic transformation in this region has also involved a high level of geographic mobility. Among female respondents, nearly 40 percent either had an out-migration experience to other county or city seeking employment or education (31.6 percent) or was an in-migrant (8.0 percent). Among the husbands of married women, out-migration was even more prevalent, close to half (46.9 percent) either worked or went to school in other counties or cities and 3.4 percent were in-migrants.

For many of the young women in our study area, marriage and childbearing are no longer assumed life course obligations dictated by parents or the larger society. Whereas the majority of our respondents still assign a very high value for having children in their lives, with over 90 percent agreeing with the statement that "watching children growing up is the greatest happiness in life" and nearly 70 percent agreeing with the statement that "those with no children live an empty life", the majority of our respondents also disagree with statements such as "the purpose of getting married is to have children," "people having children because everyone else does so" or "children's education is a great investment for parents." (see Table 2)

[Table 2 about here]

Rising age at first marriage age could well be a result of the changing attitude toward marriage (Figure 1). The mean age at first marriage among our respondents increased from 19.3 years in 1986 to 23.4 years in 2006, a 4.1 years increase in two decades. The rise of mean age at first marriage is also accompanied by a shift away from a traditional marriage age pattern by which most women get married within a narrow age range (Wang and Tuma 1993). The standard deviation of age at first marriage increased from about 1.6 years for those married for the first time in the 1980s, to 1.8 years in the 1990s, and to 2.2 years after year 2000. The changing attitude is also reflected in the time of childbearing. When asked about the ideal age of having the first child, 37 percent of respondents chose age 25, and 25 percent chose age 24, and another 24 percent chose either age 23 or age 26. In other words, close to 90 percent of respondents' ideal age of having the first child is in a narrow range between 23 and 26. Reproductive outcomes among our respondents in fact confirm the expressed ideals. At the time of our survey at the end of 2006, 16 percent of those who married in 2004 still did not have their first birth.

[Figure 1 about here]

With more than two decades of rapid economic transformation, ideational change, and government birth control policy implementation, fertility desire among our respondents matches closely to the observed low fertility regime. In our survey, to reduce the potential contaminating effect due to the presence of China's birth control policy, we asked respondents "what is the ideal number of children if not considering the factor of birth control policy?" Among survey respondents, almost all of them (99.4 percent) reported either one or two as the ideal number of children. Moreover, more respondents chose one child over two (56.3 percent vs. 43.1 percent, see Table 3). Preference of one child over two does not vary by the respondent's educational attainment level, but it does vary by age, with more younger respondents choosing one child over two than older ones, and by their household economic conditions, measured here as "affordability," which is the ratio between their household income and the median yearly educational cost for primary school children aggregated from respondents in a community. There is almost a linear negative relationship between economic constraints, measured by affordability and preference for one child, with those at lower end of the economic distribution more likely to choose one child.

[Table 3 about here]

Even with such a hypothetical question about the ideal number of children, however, one can still question the validity of the answers, because the reality most of our respondents face is a policy environment that simply does not allow a second child. A better measure for fertility preference therefore is to compare the ideal number of children between women who are only allowed to have one child and those who are allowed to have two children. Our respondents can be differentiated into two groups, those who are not qualified under the current policy to have two children (PQ1), and those who are qualified (PQ2). Among our sample of 5,821 respondents in the two locales of Jiangsu province, 4,741 were currently married at the time of the survey. About a third (33.9 percent) of married women were qualified to have a second child and the rest (66.1 percent) were only allowed to have one child according to the government policy. In the middle columns of Table 3 (Ideal Number of Children, PQ2 columns), we present answers for women who were qualified under the current policy to have two children.

Low fertility desire is clearly deeply rooted among women included in our study. More than half (53.0 percent) of all respondents who were qualified to have two children still report one child as the ideal number of children. The age pattern is similar to that for all survey respondents, namely younger respondents are more likely to choose one child over two. The differences though are that more women with the highest level of education preferring to have two children, and that the economic measure seems to have a U shape relationship with fertility desire, with those at the middle of the distribution having the highest percentage of preferring only one child.

In contrast to fertility preference that is measured by the reported ideal number of children in a general sense, a stronger indicator of reproductive behavior is fertility desire/intention, namely whether a respondent herself will consider having another child, if policy allows. Obviously, those who already had two children at the time of the survey would fall in this category. Because both fertility regulation and fertility practice in China are closely tied to marriage, we only asked fertility desire questions to those who were currently married in our survey. We compare fertility desire of these two groups in the right columns of Table 3.

Two important patterns are evident in Table 3. First, fertility desire is very low, as an overall majority of our survey respondents do not intend to have a second child, regardless of their policy qualification. Only 21.5 percent of those who qualified to have only one child wish to have a second child. Even among those who were allowed to have two children, only less than 40 percent intended to have another child. Second, policy does make a difference. The percentage of respondents desiring to have a second child is clearly higher among those who qualified under the current policy than those who did not, by a margin of nearly two to one. In addition to these two findings, it is also noteworthy that the U shaped relationship between educational attainment and economic conditions on the one hand, and fertility desire on the other is clearly present among women who are qualified to have two children.[7]

Why Stop with Only One Child?

The majority of young women in our study sample chose one child as the ideal number of children, and an even larger share of them did not plan to have a second child, even when they were allowed to under the transition away from the one child policy. The question is, then, why did young women or couples in this part of China not want to have a second child, even when they were allowed to? At the start of the paper, we raised three categories of possible reasons: economic conditions or costs, individual value orientation, and policy constraints. In our survey, respondents were asked directly reasons for not considering having two children. Their answers are summarized in Table 4.

[Table 4 about here]

Concerns over the cost of having children clearly stand out as the most commonly mentioned reason by our respondents for not wanting to have another child. Again as in Table 3 we compare answers from those respondents who were qualified to have two children with those not qualified. Respondents were allowed to choose more than one answers. Of all respondents qualified to have two children, nearly 70 percent

[7] Some couples also went out of their way to have a second child in defiance of the policy. Among 677 who are qualified to have only one child under policy stipulations but expressed the desire to have a second child, a small proportion (10.8%) indeed did so by having a second child.

mentioned high cost as a reason, and 33.8 percent chose “too poor” as a reason. Combining those two questions together, 80 percent of PQ2 respondents mentioned economic constraint as a reason for not considering having a second child. Policy was also a constraining factor, but only 31 percent among those not qualified (realistically constrained) mentioned it as a reason. Among this group, as in the group of those who were qualified to have two children, the most frequently chosen answer was economic constraint (“Cost too much”). A large share among both groups also cited “one child is good enough” as a reason, but we are not exactly sure how to interpret this. Given policy and economic cost are listed as separate categories to choose from, we take the answer of “one child is enough” as implying a cultural norm of one child that has emerged.

In addition to questions on reasons for not wanting to have a second child, we also further probed our respondents their views about childbearing by asking what factors they would take into consideration for having another child. Answers to this question, shown in Table 5, largely confirm those in Table 4 about reasons for not wanting to have another child. Economic condition again emerges as the most common concern (60 percent chose it as a “main” or ‘determinant” concern, followed by policy (35.7 percent). The answer of “personal happiness,” a measure of self-fulfillment value orientation, was only chosen by about 10 percent of the sample as a major reason.

[Table 5 about here]

In an attempt to examine the separate roles of economic constraints, value orientation, and policy restrictions on fertility intention, we use multivariate logistic regression models with a dependent variable of considering having a second child coded as 1, and otherwise 0. We include three categories of variables in our multivariate analysis, following our earlier discussions of the possible underlying forces of low fertility. The first category focuses on the macro structure. The main factor in this category is *Policy* constraint. We also include *County* and respondents’ *Hukou* status as control variables because both are closely tied to policy formulation and implementation. The second category is individual level socioeconomic status, which includes respondents’ *Education*, adjusted family income measured as *Affordability*, respondents’ employment status and economic *Sector* of the current job. We also include *Migrant* status as a factor in our preliminary work but it did not reveal any statistically significant effect. The third category looks at culturally related factors. We include a respondent’s *Status* within her household, her *Attitude* towards family and marriage, her relationships with the old generation (*Consult*), and demographic variables such as *Age, Sex* of first child, and *Marriage* status. The *Attitude* and *Status* variables are constructed from a set of survey questions using factor analysis. The *Attitude* variable is based on questions on marriage and childbearing that we presented in Table 2, with a lower value indicating a more traditional view and a higher value a more liberal view. The *Status* measure is based on a series of questions on a respondent’s role vis-à-vis her husband in making decisions of purchasing daily consumption goods as

well as big-ticket items, investment, and children's education, with a higher value indicating higher inter-spousal status (power). We fit two separate models, one for all married respondents, and the other for those who are qualified to have two children. The results are presented in Table 6.

[Table 6 about here]

For all respondents included in our study, *Policy*—whether a respondent is qualified to have two children -- does have a significant effect on a woman's desire to have a second child. The odds ratio between those qualified to have two and those only qualified to have one is 2.1 after controlling for other variables, suggesting a higher likelihood of those allowed to have children indeed considering having two. County context also makes a difference. Our respondents in County #5, a less developed county, are 1.8 times more likely to express a desire for a second child than respondents in County #2. County #5 also had more cases of policy violation than county #2: while there were 56 violations—second births without permission -- reported in County #5, only 1 such violation was reported in County #2. It is however not entirely clear whether this difference in births without permission between the two counties was due to fertility desire or to policy implementation.

After controlling for other variables in the same model, there is no difference in fertility intention between respondents with *Urban Hukou* and with *Rural Hukou*. The large difference between *In-migrant* and those with *Rural Hukou* is an artifact of policy difference across provinces. As we mentioned in the opening section, other provinces have a more lenient birth planning policies than Jiangsu. Many of those *In-migrants* had two children before they moved in from other provinces.

A respondent's social and economic standing again has clear effects on her reproductive desire. Among three socioeconomic factors, we see two significant comparisons: those with *College* degrees are more willing to express a desire of having a second child than those with an education level of *Secondary School*, and those at the two ends of the distribution in income to education cost ratio are more interested in having a second child than those in the middle, exhibiting a U shaped relationship between affordability and fertility intention. Both higher level of education and higher household income are showing as liberating factors on fertility desire after controlling for other factors. Meanwhile, those in the lower ranked service sector also express a stronger desire to have a second child compared with respondents working in other sectors, after controlling for other variables.

We control for three demographic variables because they reflect some cultural norms on childbearing in China. First, son preference in traditional Chinese culture is still an important factor behind fertility decision. Here we compare those with no child yet and those with one girl to those with one boy. Those with one girl are more likely (odds ratio=1.88) to be interested in having a second child, presumably wanting to

have a boy, than those with one boy, while we see no statistical significant difference between those with on child and those with one boy. The difference between marriage statuses is due to a policy allowance for remarried couples to have a child with a new marriage (Gu et al. 2007). The relationship between age and fertility desire shown in Tables 3 disappears after controlling for other independent variable, suggesting that the age effect likely comes from other covariates such as education or respondent's qualification for having two children.

The effects of *Attitude* and *Status* variables are consistent with the argument of ideational change. Only the *Status* variable, however, has a significant effect on fertility desire. Compared to those who say that they would consult their parents' and in-laws' opinions on fertility decision, those who are more independent minded are less likely to express an interest in having a second child. Respondents with a more liberal attitude towards marriage and childbearing however are not less likely interested in having a second child than those more traditionally minded.

A more rigorous empirical test of the factors affecting fertility, as mentioned earlier, is on fertility intention among respondents who are qualified to have a second child. Among this group of respondents, the pattern of factors affecting fertility intention, shown in the right columns in Table 6, is only marginally different from that for all respondents shown in the left columns of Table 6. Two factors that show a notable difference between two models are *Town Hukou* status and *Employment in Agriculture*. Women in both categories expressed a highly likelihood of wanting a second child in comparison to women in the reference group: with rural *Hukou* status or working in manufacturing sector. Among women who are qualified to have two children under the current policy, those with the highest educational attainment, at the two ends of the income distribution, or with only a daughter are more likely to plan to have a second child, whereas those with a higher status are less likely to do so. Economic conditions remain the most important factors in considerations for having more children.

Discussion and Conclusion

In this paper, we offer preliminary results from the first systematic study of below replacement fertility in China. Relying on survey data from one of China's economically most dynamic regions, we explore the underlying forces of China's emerging low fertility within a context of globalizing economy that has quickly engulfed the Chinese landmass in the last two decades and half. Some results from this study have special relevance for China, given its unique government intervention and control in reproduction, but many of them should have broad implications for understanding global low fertility.

In the two counties our current study covers, rapid economic transformation has

already shifted the economy from an agriculture based to one in which almost all young people are now employed in non-agricultural sectors, with a high concentration in manufacturing and service sectors. Moreover, economic transformation in this part of China also bears other characteristics of a globalizing economy: a large inflow of foreign investment, a high volume of international trade that involves not only goods but also ideas, and a common occurrence of labor mobility. At the same time as people's living standards have increased tremendously in this region and elsewhere in China, a rapidly transforming economic context has also brought about with it an increased sense of economic uncertainty. Young Chinese couples are now concerned about their own economic conditions and about the opportunities and risks their next generation might face as well. 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.

Our study has focused on three forces that are likely to affect fertility intention: economic constraints, value orientation, and the presence of government birth control policy. Of the three forces, economic conditions and concerns over economic cost stand out as the most important, followed by policy allowance and individual value orientations. Personal attitude towards marriage and childbearing shows that the traditional large family ideal is giving way to a small family norm with only one or two children. But once other factors are controlled for, individual value orientation does not show a clear impact on fertility intention. China's continuing strict birth control policy plays a significant role but it is a role that is much less crucial compared with concerns with economic constraints. Among couples who are allowed to have two children under the current policy, the majority (53 percent) considered one child as the ideal number of children, a number that does not differ from that for all young women in the areas we studied (56.3 percent). Moreover, among those who are allowed to have two children, 62.6 percent reported no plan to have a second child. Whereas the effect of policy constraint is seen in the higher percentage of women not allowed to have two children listing government policy as a reason for staying with only one child (31.3 percent) than those who are allowed (24 percent), a similar high percentage among both groups (69.5 and 69.9 percent) cited "costing too much" as a reason for not wanting another child.

The results we present and discuss in this paper are based on the first wave of a planned three-wave study that will allow us to have a better understanding of China's emerging below replacement fertility regime, and especially the separate roles of a changing global economic context and of China's nearly three-decade long one child policy. The results here are also based on only a third of our total sample size, due to the time constraint we have faced in producing this paper (data collection was carried out during the last months of 2006 and the first month of 2007). In our follow-up surveys planned roughly two years from now, we shall be able to return to

respondents who informed us their fertility intention with observations of their fertility behavior in a two-year interval. Studies as such will allow us to study further reasons for low fertility, and the links between fertility intention and behavior.

Table 1 Social and Economic Profile of Female Respondents and Their Husbands, Two Locales in Jiangsu Province, China, 2006

	Respondents (N=5821)	Husbands (N=4741)
Age Group (%, 4 missing cases for Husbands)		
18-20	10.8	
21-25	15.2	8.0
26-30	19.0	20.3
31-35	19.9	23.4
35-40	35.0	35.8
40+		12.5
Marital Status (%)		
Never Married	15.4	
First Marriage	79.8	
Remarried	2.5	
Separated/Divorced/Widowed	2.2	
Mean age at first marriage (mean, std)	22.2 (2.07)	
Education (%)		
Primary School or less	15.4	8.7
Secondary School	56.0	61.1
High School	17.1	21.8
College or above	11.6	8.4
Hukou Status (%)		
Rural	66.7	68.1
Urban	23.8	24.0
Town	7.9	6.5
Migrant	1.5	1.4
Unemployed (%)	18.8	2.1
Economic Sector (%)		
Agriculture	18.1	4.1
Manufacture	50.3	55.0
Low Skill Service	20.8	28.5
High Skill Service	10.7	11.5
Migration Experience (%)		
Yes	31.6	46.9
No	60.4	49.7
In-migrant	8.0	3.4
Household Income (RMB: Mean, Std)	29117.0 (26950.6)	
Economic Affordability* (Mean, Std)	15.1 (11.9)	
Residence (%)		
Rural	63.8	65.1
Urban	36.2	34.9

Note 1. The number cases (*N*) reported here are not adjusted, but all summaries statistics are properly weighted by sampling probability.

Note 2. Economic Affordability is defined as total household income divided by average yearly primary school cost in the village/community.

Table 2 Respondents' Answers to Attitude Questions on Family and Having Children

Question	Totally Agree (%)	Somewhat Agree (%)	Not Sure (%)	Somewhat Disagree (%)	Totally Disagree (%)
Having children affects women's career	10.9	33.1	2.9	35.8	17.4
The purpose of getting married is to have children	19.6	23.9	2.1	41.3	13.1
People having children because everyone else does so	12.5	22.6	2.3	44.0	18.6
Only children could provide old age care and companionship	29.4	32.2	1.7	29.7	7.1
Watching children growing up is the greatest happiness in life	74.9	18.3	1.3	4.6	0.9
Pregnancy and giving birth are a lot of trouble	16.7	28.8	3.5	34.6	16.4
Children's education is a great investment for parents	20.8	23.1	2.0	36.3	17.8
An ideal family should have at least one boy	10.8	13.2	2.2	41.7	32.1
Those with no children live an empty life	44.2	24.9	3.4	19.4	8.1
Those who could not afford should not have children	9.6	19.5	2.4	39.5	29.1
Having children would affect (negatively) marriage quality	2.6	9.6	3.4	33.7	50.8
Only families with children are happy families	81.8	12.1	1.7	3.5	0.9

Note 1. All percentage statistics are properly weighted by sampling probability.

Table 3 Reproductive Ideal and Reproductive Desire

	Ideal Number of Children (%)*				Want to Have Two Children (% of saying yes)	
	All Respondents		PQ2			
	1	2	1	2	PQ1	PQ2
Age Group						
18-20	63.8	35.7	71.1	28.9	25.1	--
21-25	65.4	34.6	63.0	37.0	25.7	35.3
26-30	55.9	43.2	53.5	45.6	23.4	34.3
31-35	55.0	44.7	49.4	49.7	23.7	35.9
35-40	51.0	48.1	41.3	56.8	19.3	48.2
Education						
Primary School or Less	55.3	43.8	53.1	46.1	20.1	43.8
Secondary School	55.5	44.1	52.6	46.7	20.5	35.2
High School	58.9	39.8	57.2	41.0	23.5	36.4
College or Above	57.8	42.2	45.1	54.9	30.0	51.0
Affordability						
<=5	65.3	33.5	45.7	49.4	23.9	50.7
5-10	59.2	40.5	56.4	43.0	19.1	33.1
10-15	56.1	42.9	55.3	43.8	18.9	35.0
15-20	52.1	47.1	48.6	49.9	23.0	39.1
>20	51.3	48.6	50.0	50.0	27.8	43.4
Total (%)	56.3	43.1	53.0	46.1	21.5	37.4
Total (N)	3301	2495	787	696	3249	1492

Note 1. The number cases (*N*) reported here are not adjusted, but all summaries statistics are properly weighted by sampling probability.

Note 2: Percentages in each row of "Ideal Number of Children" do not always add up to 100 because of missing cases and omitted categories (few people choose no child or more than two children).

Table 4 Reasons for Having Only One Child, Women Aged 18-40, Jiangsu Province, China

Reasons for Not Having a Second Child	PQ1 (%)	PQ2 (%)
Cost Too Much	69.5	69.9
Too Poor	33.8	32.0
Health Concern	3.8	3.4
No Enough Energy	19.9	18.1
Too Old	16.3	10.3
One Is Good Enough	60.1	69.4
Everyone Else Has Just One	1.2	1.4
Following Gov.'s Call (Policy)	31.3	24.0
Other	0.2	0.7

Note 1. All percentage statistics are properly weighted by sampling probability.

Table 5 Factors To Consider for Having a Second Child, Women Aged 18-40 who are Qualified to Have Two Children, Jiangsu Province, China

	No (%)	Maybe (%)	Mainly (%)	Determinant (%)
Economic Situation	14.2	25.8	55.0	5.0
Career/Education	35.8	41.1	21.6	1.5
Housing	48.8	31.9	18.1	1.2
Health	43.1	33.9	21.3	1.8
Marriage	52.4	27.3	18.6	1.8
Personal Happiness	60.1	30.2	9.0	0.7
Other People's Opinion	78.2	17.8	3.5	0.5
Childcare	47.6	34.0	17.7	0.7
Old Age Support	51.5	35.5	11.9	1.2
One-child Benefit	55.8	30.4	13.6	0.2
Child's Sex	66.9	23.5	9.1	0.5
Child's Companionship	51.9	37.8	10.0	0.3
Birth Planning Policy	35.4	28.9	31.1	4.6

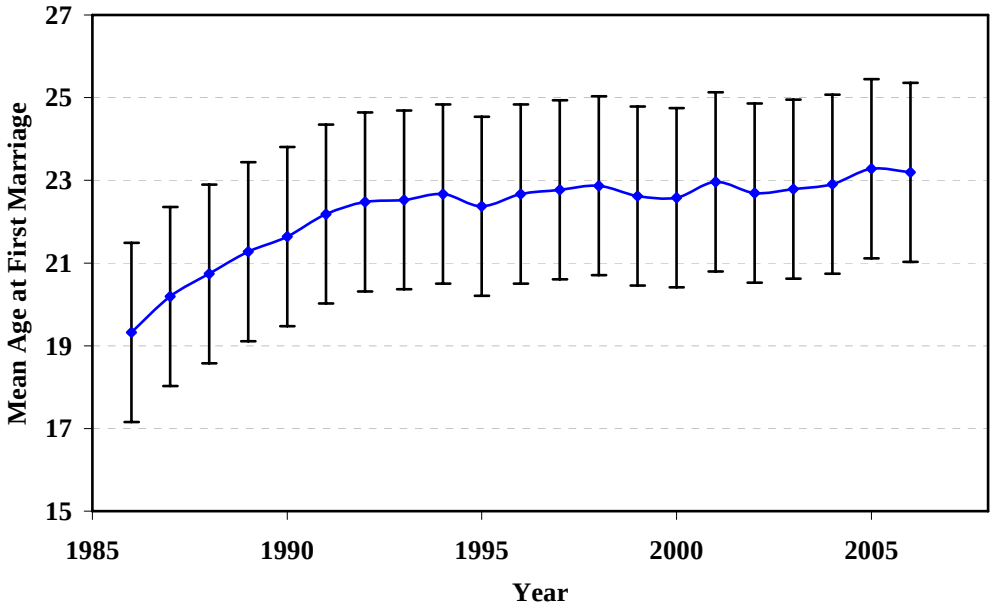
Note. All percentage statistics are properly weighted by sampling probability.

Table 6 Influencing Factors for Wanting a Second Child, Multivariate Analysis

	All Respondent			Policy Qualification: Two Children		
	Odds Ratio	Std. Err.	P-value	Odds Ratio	Std. Err.	P-value
Policy (reference= PQ1)						
PQ2	2.082	0.247	0.000			
County (reference=County #2)						
County #5	1.835	0.337	0.006	2.187	0.563	0.009
Hukou (Reference=Rural)						
Urban	1.133	0.174	0.433	1.460	0.502	0.291
Town	1.231	0.160	0.135	3.364	1.238	0.006
In-migrant	5.496	0.812	0.000			
Education (reference=Secondary School)						
Primary School or Less	0.978	0.140	0.879	1.094	0.233	0.680
High School	1.143	0.094	0.128	1.165	0.229	0.452
College or Above	2.006	0.337	0.001	3.033	1.126	0.010
Affordability (reference="5-10")						
>=5	1.353	0.152	0.019	1.653	0.637	0.215
10-15	1.121	0.098	0.215	1.340	0.223	0.102
15-20	1.373	0.181	0.032	1.802	0.274	0.002
>20	1.664	0.211	0.001	1.977	0.426	0.007
Sector (reference="Manufacture")						
Unemployed	1.161	0.213	0.431	1.441	0.345	0.151
Agriculture	1.196	0.275	0.450	1.702	0.226	0.001
Low Skill Service	1.327	0.128	0.012	1.838	0.282	0.002
High Skill Service	0.979	0.224	0.927	0.784	0.272	0.496
Sex of first child (reference=male)						
No Child	1.116	0.193	0.538	1.427	0.231	0.046
Female	1.875	0.170	0.000	2.076	0.461	0.006
Marrirage Status (reference=first marriage)						
Remarried	3.743	0.367	0.000	11.296	2.808	0.000
Age	1.003	0.011	0.793	1.009	0.015	0.567
Attitude Factor	0.919	0.057	0.194	0.923	0.069	0.306
Status Factor	0.873	0.034	0.004	0.834	0.057	0.020
Consult with Parents for fertility decision (reference=yes)						
No	0.806	0.132	0.210	1.048	0.226	0.833
Don't Know	0.726	0.112	0.059	0.773	0.218	0.380
Consult with in-laws for fertility decision (reference=yes)						
No	0.749	0.154	0.184	0.623	0.236	0.234
Do't know	0.680	0.124	0.054	0.624	0.177	0.120
N		4735			1470	

Note. The number cases (*N*) reported here are not adjusted, but all summaries statistics are properly weighted by sampling probability.

Figure 1 Mean Age at First Marriage 1986-2006, Jiangsu Province, China



References

Alderson, Arthur and François Nielsen. 2002. “Globalization and the great U-turn: Income inequality trends in 16 OECD countries.” *American Journal of Sociology* 107 (5):1244-99.

Bongaarts, John and Griffith Feeney. 1998. “On the quantum and tempo of fertility.” *Population and Development Review* 248: 271-291.

Cai Fang and Gu Baochang (eds.). 2006. *Demographic Transition and Its Social and Economic Consequences* (in Chinese). Beijing: Social Sciences Academic Press.

Cai, Yong. 2005. "Assessing fertility levels in China using variable-r method". Paper presented at the Population Association of America annual meeting, Boston.

Caldwell, John C. and Thomas Schindlmayr. 2003. “Explanations of the fertility crisis in modern societies: A search for commonalities.” *Population Studies* 57(3): 241-263.

Cornia, Giovanni Andrea. (ed.) 2004. I*nequality, Growth, and Poverty in an Era of Liberalization and Globalization*. Oxford University Press.

Esping-Andersen, Gøsta. 1999. *Social Foundations of Post-Industrial Economies*. New York: Oxford University Press.

Evans, Peter and Sarah Staveteig. 2006. “The changing structure of employment in contemporary China: what does it tell us about the social consequences of 21st century industrialization?” Paper presented that the conference “Creating Wealth and Poverty in Contemporary China.” Yale University.

Greenhalgh, Susan and Edwin A. Winckler. 2005. *Governing China’s Population: From Leninist to Neoliberal Biopolitics*. Stanford: Stanford University Press.

Gu, Baochang, Wang Feng, Guo Zhigang, and Zhang Erli. 2007. “China’s local and national fertility policy at the end of the twentieth century.” *Population and Development Review*. 33 (1): 129-147.

Guo, Zhigang and Chen Wei. 2007. “Below replacement fertility in mainland China,” in Zhongwei Zhao and Fei Guo (eds.) *Transition and Challenge: China’s Population at the Turn of the Twenty-First Century*. Oxford University Press. 54-70.

Kohler, Hans-Peter, Francesco Billari, and José A. Ortega. 2002. “The emergence of lowest-low fertility in Europe during the 1990s.” *Population and Development Review* 28: 641-680.

Jiangsu Bureau of Statistics. 2007. 江苏省 2006 年国民经济和社会发展统计公报 http://www.jssb.gov.cn/tjfx/tjgbzl/1200703050028.htm

Lee, James and Wang Feng. 1999. *One Quarter of Humanity, Malthusian Mythology and Chinese Realities 1700-2000*. Cambridge, MA: Harvard University Press.

Lesthaeghe, Ron. 1995. “The second demographic transition in Western countries: an interpretation,” in Karen O. Mason and A. M. Jensen (eds.), *Gender and Family Change in Industrial Countries*. Oxford: Clarendon Press. Pp. 17-62.

Lutz, Wolfgang, Brian C. O’Neill and Sergei Sherbov. 2003. “Europe’s population at a turning point.” *Science* 299:1991-1992.

McDonald, Peter. 2000. “Gender equity in theories of fertility transition.” *Population*

and Development Review 26:427-439.
McDonald, Peter. 2002. “Sustaining fertility through public policy: the range of options.” *Population* (English edition) 57(3): 417-446.
Mittelman, James H. 2000. *The Globalization Syndrome: Transformation and Resistance*. Princeton: Princeton University Press.
Morgan, S. Philip and Miles G. Taylor. 2006. “Low fertility at the turn of the twenty-first century.” *Annual Review of Sociology* 32: 375-399.
Retherford, Robert, Minja K. Choe, Jiajian Chen, Xiru Li and Hongyan Cui. 2005. "Fertility in China: how much has it really declined?" *Population and Development Review* 19(1): 57-84.
Scharping, Thomas. 2007. “The politics of numbers: fertility data in recent decades,” in Zhongwei Zhao and Fei Guo (eds.) *Transition and Challenge: China’s Population at the Turn of the Twenty-First Century*. Oxford University Press. 34-53.
Stiglitz, Joseph E. 2002. *Globalization and Its Discontents*. New York: W. W. Norton.
van de Kaa, DJ. 1987. “Europe’s second demographic transition.” *Population Bulletin* 42: 1-57.
Wang, Feng. 2005. "Can China Afford to Continue its One-Child Policy?" *Asia Pacific Issues*. No. 17. Honolulu: East-West Center.
Wang, Feng and Nancy B. Tuma. 1993. “Changes in Chinese marriage patterns during the twentieth century.” *Proceedings of the XXIInd General Conference of the IUSSP*, Vol. 3: 337-352.
Wang Feng and Andrew Mason. Forthcoming. “The demographic factor in China’s transitions,” in Loren Brant and Thomas Rawski (eds.) *China’s Economic Transitions: Origins, Mechanisms, and Consequences*. Cambridge: Cambridge University Press.
Wilson, Chris. 2004. “Fertility below replacement level.” *Science* 304:207-208.
Zeng, Yi, Li Ling, Gu Baochang, and Lin Yifu (eds.). 2006. *21st Century Population and Economic Development in China* (in Chinese). Beijing: Social Sciences Academic Press.
Zhang, Guangyu and Zhao Zhongwei. 2006. "Reexamining China's fertility puzzle: Data collection and data use in the last two decades" *Population and Development Review* 32: 293-321.