The Current Fertility Trend in China: an Evaluation of the Effectiveness of the Family Planning Policy, its Relative Importance over Time and the Potentiality for its Relaxation

Introduction

Generally known as the one-child policy, the Chinese fertility regulation has been a controversial attempt on the part of the government to curb population growth ever since it was stipulated in the year of 1979. Apart from concerns about human rights issues in the political domain, academic circles also witnessed heated debates on the legitimacy and effectiveness of such a family planning campaign. Demographers, in particular, disagree dramatically when it comes to the interpretation of the fertility patterns in China. While such factors as considerable temporary migration from rural to urban areas and the underreport of higher-parity births cast some doubt on a total fertility rate around 1.4 (Lavely 2001; Wang 2005), scholars generally agree that the current TFR in China is already below replacement level (Merli and Smith 2002; Wang 2005; Ding and Hesketh 2006; Gu et al. under review). However, there is no consensus as to whether it was due to the stringent family planning policy or the overall economic modernization that China saw a fertility decline in the past few decades. In other words, it is still open to question whether China serves as a special case where political forces have contributed to its demographic transition, or it is simply one of the many countries where fertility drops in the process of industrialization, as a result of such factors as rising standards of living, spread of mass education, increasing female labor force participation, availability of

modern contraceptive methods and diffusion of a preference of small families over extended families.

On one hand, researchers often stress on the strength of a cultural tradition that values children, especially sons (Arnold and Liu 1986; Merli and Smith 2002; Murphy 2003; Ding and Hesketh 2006), and argue that it would be impossible that China would have experienced a rapid fertility decline if it were not for an overarching restraint on people's reproductive choices. Attane (2002) collected rich information on a regional basis and measured the extent of local resistance to the family-planning policy on the provincial level. She pointed out that the regulations curbed the translation of an emotional discontent to a behavioral noncompliance, which was particularly true of the rural areas, with a lower level of socioeconomic development and a larger proportion of women in the agricultural workforce. Hwang and Saenz (1997) examined the fertility of Chinese immigrants in the United States in order to gauge the impact of the cultural characteristics in a policy-free setting. They found that the fertility rate of immigrant women from China was not only higher than the pre-emigration figure, but also greater than that of their counterparts from other countries, and thus illustrated the depressing effect on fertility of the existing family planning policy. Moreover, not only does the policy have a check on the traditional preferences by imposing an external constraint on the actual family size, it is also likely to promote an ideational transformation over time by highlighting the advantages of smaller families and downplaying the importance of children, as people always seek to rationalize their surrounding environments (Merli and Smith 2002).

On the other hand, scholars would question the effectiveness of China's family planning policy based on both historical and economic arguments. Data from the 1970s — that is, before the one-child policy was drafted — already illustrated a drop in the fertility levels of over 50 percent. This was largely attributed to the "later-longer-fewer" campaign, which advocated later marriage, longer birth intervals and fewer children (Cho 1984; Wang 2005). Yet during the first decade after the current family planning policy was put into effect, there seemed to be no further decline as far as fertility levels are concerned (Wang 2005), which was cited as evidence to challenge the necessity to adopt these drastic regulations. Besides, those years in which the family planning policy governed people's reproductive choices overlapped with a period in the Chinese history that witnessed great socioeconomic advancement in terms of industrialization, urbanization, educational attainment, general standard of living and female labor force participation. In other Eastern Asian countries and regions where the Chinese cultural traditions dominate and fertility declines without any political interferences, such as Japan, South Korea, Singapore, Taiwan and Hong Kong, these socioeconomic changes proved to be the primary motivators for the demographic transition (Jones and Letee 2002). Therefore, it was not unjustified that some scholars believe that, given the economic and social conditions in China, its total fertility rate would stabilize around replacement level, even if the policy restriction were lifted (Poston and Gu 1987; Wang 2005).

Since it would be a counterfactual to imagine what would have happened if the policy had not been imposed, the effectiveness of the family planning policy is doubly difficult to evaluate. However, the question still deserves special attention and almost requires an urgent answer, because such problems as an aging population, an imbalanced sex ratio and a decreasing labor force loom large with the current demographic structure (Merli and Smith 2002; Murphy 2003; Wang 2005). While it is true that the one-child stipulation is by no means universal and local fertility regulations present tremendous variations (Attane 2002; Merli and Smith 2002; Gu et al. under review), the majority of Chinese couples are subject to the one-child rule (Gu et al. under review). A relaxation of the policy would help alleviate these pressing social concerns, but the feasibility of such a step depends on the impact of the family planning policy on people's reproductive behaviors. Simply put, if the socioeconomic factors were adequate to lead to a relatively low fertility level, it would be beneficial to take away the policy restrictions. However, if the fertility regulations turned out to be the primary force against the realization of large families, a reversal in the government policy would be likely to trigger a relapse in the demographic trend and once more put China on the track of rapid population growth.

Motivated by this important academic debate, my paper aims to evaluate the effectiveness of the family planning policy and thus offer some preliminary answers to the question about its relaxation. First, I would provide a general sketch of the family planning policy, explaining its evolution during the past few decades and laying out its regional variations. Next, I would apply Attane's (2002) classification scheme concerning the level of permissiveness in the local family planning regulations and assess

the policy effect on both a behavioral and an ideational level in the years of 1993 and 2004. I am also going to examine the influence of other socioeconomic factors at these time points so as to give a more complete presentation of the mechanisms underlying the fertility patterns in China. Then I will use the results from the cross-sectional analyses to gauge possible changes in the relative importance of the driving forces of the demographic transition in China. Based on what I have found out about the fertility trend in China, I will end this discussion by assessing the potentiality of a policy relaxation.

The family planning campaigns in China since the 1970s

The beginning of the 1970s saw the third round of family planning campaigns launched by the Chinese government. Unlike its previous two attempts (1956-1957 and 1962-1966), this policy, which was put forward in 1971 and guided by the "later-longer-fewer" principles, had a long-lasting impact on people's reproductive behaviors in China (Attane 2002). Focusing on marriage and fertility patterns, the family planning campaign advocated later marriages, longer birth intervals and fewer children. It also took into account the differentials between urban and rural areas in terms of the level of economic development and the prevalence of traditional family values, as was reflected in the detailed regulations that applied to urban and rural areas separately. In the cities, men and women were encouraged to delay marriage until the ages of 28 and 25 respectively, and the optimal family size was set at two children for each couple, while in rural areas, men and women could get married as early as 25 and 23 respectively, and the maximum number of children each couple were allowed to have was three. Besides, a universal

birth interval of three to four years was proposed. Even though regional fertility levels still varied sharply from one province to another, the family planning campaign in the 1970s made some achievements in curbing rapid population growth. The total fertility rate dropped from 5.4 in 1971 to 2.8 in 1979, which was largely attributed to delayed marriages, as the mean age at first marriage for rural women increased by 2.5 years (from 20.1 to 22.6), and that for urban women went up by 2.9 years (from 21.5 to 24.4) for the same period of time.

However, as the Chinese government still perceived a population crisis that would interfere with the economic development and pose a major barrier on the way to modernization (Greenhalgh 2003), they considered the family planning campaign as a failure in that following the existing fertility trends, the population size would definitely exceed the official target of 1.2 billion by 2000. One comment made by the Vice-Premier and head of the State Family Commission Chen Mahua in 1979 that "(o)nly if 95 percent of the couples of reproductive age in urban areas and 90 percent in rural villages give birth to only one child will the total population be controlled at 1.2 billion by the end this century" (Cho 1984) would illustrate how urgent the demographic scenarios appeared to the Chinese officials. Now that the government had its priority on industrialization and was extremely reluctant to let unnecessary population growth come in its way, it is understandable that it decided to draft a more stringent family planning policy in order to further reduce fertility. It was under these circumstances that the one-child policy was stipulated and put into effect.

Its initial stage was dominated by rigid rules that allowed only one child for each couple regardless of their socioeconomic and cultural backgrounds. However, given the persistence of traditional values, the inadequacy of social security coverage and the demand for household labor, especially in rural areas, the demographic ambition of the government clashed considerably with the local reality. The spread of contraceptive methods, particularly those with a long-lasting effect such as IUD and sterilization, thus coexisted with a high level of resistance to the family planning regulations and a large number of out-of-policy births. According to the official stipulations, the use of IUD was required after the first birth and sterilization was compulsory after the second birth. One 1982 survey showed that 71 percent of married women aged 15 to 49 were practicing contraception at that time and 75 percent of them were using a method with a long-term impact. On the other hand, noncompliance with the official birth "quota" and underreport of the actual fertility undermined the effectiveness of the one-child policy. Women aged between 25 and 29 in three quarters of the provinces had reached or gone beyond the fertility levels authorized by the family planning regulations in 1988. Higher-order births, which would have been prevented based on the original stipulations of the policy, consistently accounted for a considerable proportion of the total fertility throughout the 1980s (35 percent in 1980 and around 25 percent by 1988) (Attane 2002).

The difficulty of applying a one-child rule universally led the Chinese officials to reevaluate the socioeconomic reality and enacted a more realistic family planning policy in 1984, when the government relaxed their regulations concerning the second birth and focused on higher-order parities instead. This policy shift acknowledged the diversity in

terms of the socioeconomic, cultural and ethnic backgrounds in the population, and started to decentralize the authority to draft family planning regulations. The guiding principle was to further control higher-order births (third and beyond) as well as out-of-policy second births while permitting the couples who were in need of a second child to have one (Greenhalgh 1986; Gu et al. under review). In addition, the government decided to move away from a coercive approach in its implementation of the family planning policy, and depend more heavily on economic incentives and disincentives instead (Cho 1984). The offering of free medical care and the application of "penalty fees" would serve as illustrations of such incentives and disincentives respectively. Under the guiding principle, the local governments could stipulate their own criteria in order to identify those who were actually "in need", based on such demands as for old age support and household labor. This resulted in a greatly localized nature of the family planning policy, which would be discussed later. The spirit of the modified one-child policy persisted ever since. When China's first Population and Family Planning Law came into being in September 2002, it did not specify any fixed number of children each couple could have. The details of the family planning regulations were left for the provincial governments to decide (Gu et al. under review).

The regional variations in the fertility regulations and Attane's classification scheme concerning their levels of permissiveness

The entitlement to drafting their own family planning policies of the local governments led to remarkable regional variations in their specifications (Attane 2002;

Merli and Smith 2002; Gu et al. under review). In an overview of the local fertility regulations across China, Gu et al. (under review) separated out 22 kinds of situations where a couple could have a second child. According to the rationales underlying these particular cases, they identified 4 categories for the local exemptions to the one-child policy.

The first category was what they termed *entitlement/replacement*. These regulations cover the couples whose first child is either dead or physically challenged, those whose husband is the only fecund son in his family, those who were once diagnosed as infertile and adopted a child, and those who remarried. The second category illustrates *political/ethnic/social* considerations. Under any one of such conditions as an ethnic minority background, an uxorilocal marriage and the place of birth being overseas are the particular couples allowed to have more than one child. The third category reflected *economic* concerns. The local governments recognized the need of those families who relied heavily on household labor to carry out their economic activities, and made modifications to the one-child principle accordingly. Rural households who are engaged in labor-intensive agricultural production, for instance, would fall under this category. The last kind of exemptions has its basis in *demographic* conditions. A rural family that has only one daughter or a couple who are single children themselves would be qualified to have a second child.

Even with such a great number of conditions acknowledged by the provincial family planning policies where a couple can have a second child, the most distinctive

marker turns out to be the rural/urban divide. While the one-child-per-couple principle dominates in urban areas, the rural population in China is covered by three kinds of fertility regulations — the one-child policy, the one-and-a-half children policy and the two children policy (Gu et al. under review). Among the 31 mainland provinces and municipalities, six of them — Beijing, Tianjin, Shanghai, Chongqing, Jiangsu, and Sichuan, also extended the one-child-per-couple rule to rural households. 20 provinces allowed their rural residents to have a second child if their first one is a girl, given certain spacing between them. The remaining five — Hainan, Ningxia, Qinghai, Yunnan, and Xinjiang, permitted second births for rural couples regardless of the sex of their first child. Gu et al. (under review) estimated that those that are subject to the one-child policy and the one-and-a-half children policy account for 35.4 percent and 53.6 percent of the total population respectively. Furthermore, as only the couples whose first child is a girl can have a second one under the one-and-a-half children policy, the proportion of people who will end up with a single child far exceeds the 35.4 percent who are authorized to have only one child by the policy. Suppose the sex ratio at birth is 107 in favor of boys, only 48.3 percent of the population covered by the one-and-a-half policy can actually achieve a parity of two. Therefore, the proportion of couples who will have a single child would be approximately 63 percent, while those with two children would account for 36 percent.

Attane (2002) analyzed the fertility regulations at the provincial level in the late 1980s and following a similar line of thought to that of Gu et al (under review), came up with a classification scheme indicating the degree of permissiveness represented in the local family planning policies. The first group consists of provinces where relatively

stringent stipulations concerning second births are practiced and no more than 50 percent of the women are allowed to have more than one child. Except for Hubei, all other provinces in this category lie on the coastal line, which, broadly speaking, illustrates a higher level of economic development when compared with inland areas. The second group includes most central and southern provinces in China, where 50 to 70 percent of the women are entitled to have a second child if the first-born is a girl or the family has economic hardship. The third group of provinces overlaps with those where considerable proportions of the populations are ethnic minorities (i.e., Guizhou, Hainan, Inner-Mongolia, Ningxia, Qinghai, Tibet, Xinjiang, and Yunnan) and the family planning policies are thus the least strict. A second child is permitted to over 70 percent of the women in these places, and in Xinjiang particularly, 40 percent of the women can even have a third child. Such a typology provides meaningful lenses through which the impact of the policy could be assessed. My hypothesis is that the provinces with family planning regulations of various degrees of permissiveness would differ not only in terms of the actual fertility level but also in the ideal family size if the political interferences were effective. On the one hand, the local policies specify the maximum number of children a couple could have and therefore are closely related to the achieved fertility. On the other hand, as already mentioned, social actors have a tendency to rationalize the situations in which they are placed (Merli and Smith 2002). Following this logic, those who are subject to a more strict family planning policy would be more likely to search for the advantages of having fewer children and their preferred family size would correspondingly move towards the lower end. This mechanism would be especially conceivable decades after the family planning policy was enacted, as younger cohorts of

women who were socialized to recognize the benefits of smaller families came of childbearing age. Besides, an examination of the policy effect on ideal fertility would help evaluate the feasibility of further relaxations of the family planning policy, because it would sketch a rough picture of potential fertility levels in a policy-free setting.

Data and methods

The data I used for this analysis came from the China Health and Nutrition Survey (CHNS), available at the Carolina Population Center at the University of North Carolina at Chapel Hill. It is a study designed to gauge the impact of the dramatic economic and social changes that have taken place in China, and conducted over years. Starting from 1989, the Carolina Population Center, with their collaborators, the National Institute and Food Safety and the Chinese Center Disease Control and Prevention, have collected rich information about economic transformation, public health, demographics and reproductive behaviors in the Chinese community. The research covered eight provinces initially (Heilongjiang, Jiangsu, Shandong, Henan, Hubei, Hunan, Guangxi, and Guizhou) and later added one more (Liaoning). The research team aimed at collecting data with sufficient variations in terms of geographic locations, economic development, public resources and health outcomes, and applied a random cluster procedure within them to select a sample of about 4,400 households with approximately 16,000 individuals. Follow-ups were conducted in 1991, 1993, 1997, 2000 and 2004 respectively.[1]

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[1] http://www.cpc.unc.edu/projects/china/proj_desc/survey.html

Table 1 The Number of Cases in each Category under Attane's Classification Scheme in 1993

Level of permissiveness	Number of Cases
Low	1302
Medium	959
High	285
Total	2546

For those women under 52 who were married, divorced, or widowed at the time of each survey, there was a separate section on their pregnancy and birth history. Questions concerning fertility preferences and an ideal family size were also asked. In 1993 and 2004, the number of women who matched these criteria and offered adequate reproductive as well as demographic information was around 2,546 and 2,641 respectively. Given the remarkable localized nature of the family planning policy in China (Attane 2002; Merli and Smith 2002; Gu et al. under review), such a small sample, while it might not represent all the economic, social and cultural mechanisms underlying the demographic choices, will be revealing about the most important factors and thus appropriate for this study.

Applying Attane's classification scheme, four out of the eight provinces represented in the 1993 survey fall under the category of low level of permissiveness (Heilongjiang, Jiangsu, Shandong, and Hubei), three under medium level of permissiveness (Henan, Hunan, and Guangxi) and one under high level of permissiveness

Table 2 The Number of Cases in each Category under Attane's Classification Scheme in 2004

Level of permissiveness	Number of Cases
Low	1456
Medium	895
High	290
Total	2641

(Guizhou). In addition, Liaoning province, which was present only in the 2004 survey, according to Attane (2002), belongs to the group with a low level of permissiveness in terms of their fertility regulations. I constructed a dummy variable for each level of permissiveness and used the low level of permissiveness as the reference category in my models (see Tables 1 and 2 for frequency distributions). Because in a low-fertility country like contemporary China, the distributions of both the achieved and the ideal family size counts are heavily skewed to the left, I chose Poisson regression over OLS modeling in order to avoid potential bias in the estimates. Furthermore, as the data were not over-dispersed (i.e., as against the assumption of Poisson distribution, the mean turns out to be smaller than the variance), in which case negative binomial regressions tend to yield similar results to what can be obtained from the Poisson models, I consider the latter sufficient for the current analyses (Poston 2002). If there exists a policy impact, I would expect to find significant differences in terms of reproductive behaviors and preferences between these categories in the two cross-sectional examinations.

Table 3 Descriptive Statistics for Interval Economic and Demographic Controls and their Partial

Correlations with the Dummy in 1993

Variable	Years of schooling	Age	Age at first marriage
Number of cases with no missing values	2534	2546	2286
Mean	6.10	36.57	21.35
Standard Deviation	3.94	7.80	3.14
Correlation coefficient with the dummy (urban = 1)	.33 ***	.02	.22 ***

$* p < .05$ $** p < .01$ $*** p < .001$

My two dependent variables, accordingly, are *the current number of children a woman has* and her *ideal family size* in the absence of the fertility policy at each time point. The values for the current number of children a woman had came from the question *how many children have you given birth to*, adjusted for the number of children who died. *Ideal family size* is a summary of *the current number of children a woman has* and the number of additional children the respondents wanted if there were no policy restraint. Values for the latter were obtained based on questions such as *If you could choose the number of children to have, would you have a(nother) child sometime* and *If you could choose the number of children to have, how many more children would you want to have*. For a woman who was pregnant when interviewed, her unborn baby counted as one additional child wanted. The assumption was that they did not think that they already had too many children, for data on their feelings about their current number

of children was not available (see Merli and Smith 2002). Besides, the structure of the questionnaire used in 1993 differed from that in 2004 in that those women who checked either male or female sterilization as their method for birth control skipped questions relevant to the additional number of children they would like to have if there were no policy restraint. Since a variety of contraceptive methods were already available in 1993 and sterilization was no longer compulsory, it is reasonable to assume that the women who chose such a permanent method for birth control did not want any more children.

For both dependent variables, I ran the Poisson procedure twice in each time point analyzed here, the first time with the categorical predictors for policy permissiveness alone and the second time with additional economic as well as demographic controls. These controls include years of schooling, age, age at first marriage, and a dummy variable for residence in urban places. Descriptive statistics for the interval variables and their partial correlation coefficients with the dummy are presented in Tables 3 and 4. Tables 5 and 6 give the Poisson regression coefficients for *the current number of children a woman has* and her *ideal family size* in the absence of the fertility policy respectively for both years.

Cross-sectional findings

Since the cross-sectional data showed similar patterns, I will only refer to the outcomes in 2004 for discussion. For such a small sample with only about 2,600 respondents, the highly significant findings were quite striking. My first question

concerning the effectiveness of the family planning policy is sufficiently answered in the affirmative. In the case of *current number of children*, without controlling for the economic and demographic factors, the mean number of children a woman under a fertility regulation with a medium level of permissiveness bears witnesses an 18-percent increase (calculated from exponentiations) compared to her counterpart who is subject to a policy with a low level of permissiveness. This gap in the average achieved family size increases to 28 percent when places with a high level of permissiveness are pitted against the reference category. With an intercept of .73, the differences would translate into .37 more children in the case of a moderately permissive family planning policy and .58 more in that of a highly permissive policy. The same pattern is reflected by the ideational measurement. Mean *Ideal family size* increases by 26 and 30 percents respectively when places with medium and high levels of permissiveness instead of the low-level group are examined. The count equivalents are .64 and .75 children respectively. Such results illustrate the acceptance of the external environment as well as the ideological justification for the policy restraint, and thus offer some support for Merli and Smith's (2002) rationalization argument.

Equally interestingly, in both cases, the magnitudes of the policy effect, though slightly suppressed, remain significant after *place of residence*, *years of schooling*, *age* and *age at first marriage* are taken into account. While the other predictors operate on the reproductive behaviors and preferences through their own mechanisms, the independent impact of the family planning policy is not refutable. Other things being equal, the current number of children the average woman bears goes up by 20 percent if

the policy has a medium level of permissiveness as opposed to a low level of permissiveness, which would in turn translate into an increase of .24 children. When places with the most permissive policy are under examination, the percentage and value increases are 31 percent and .37 children respectively. Turning to *ideal family size*, controlling for the socioeconomic and demographic variables, the mean number of children women would like to have grows by 27 percent (.53 children) if they are exposed to a moderately permissive family policy and 31 percent (.63 children) if they witness the least restrictive policy.

Table 4 Descriptive Statistics for Interval Economic and Demographic Controls and their Partial Correlations with the Dummy in 2004

Variable	Years of schooling	Age	Age at first marriage
Number of cases with no missing values	2641	2641	2525
Mean	7.69	39.22	21.62
Standard Deviation	3.79	7.83	2.87
Correlation coefficient with the dummy (urban = 1)	.24 ***	.02	.11 ***

$* p < .05$ $** p < .01$ $*** p < .001$

As for the socioeconomic indicators, namely, *place of residence*, *years of schooling* and *age at first marriage*, their signs are all as expected in both the behavioral and the ideational models. Independent of the restrictive family planning policy, a lower number of existing children and the desire for a smaller family tend to happen to those women

who live in urban areas, who are better educated and who marry at a later age. Because the last item on my research agenda is to assess the feasibility of a policy relaxation, I need to examine whether an ideational transition has taken place in China that depreciated the value of extended families and established nuclear families as the dominant trend, as in other Eastern Asian countries. If there is evidence showing a sufficiently large scale on which the ideational transformation operates, concerns about a reversal of the demographic pattern and a considerable jump in the total fertility rate once the policy restriction were lifted can be somehow eased, for the spread of modern fertility preferences would guard against such prospects in the absence of the family planning regulations. Now that they illustrate similar patterns in the statistical analyses and the ideational is more relevant to my research interests than the behavioral, I will focus on the former as I try to identify the socioeconomic mechanisms underlying the demographic characteristics.

It is true that these three measures of socioeconomic impact in my model are interrelated, as urban areas on the whole represent a higher level of educational attainment and extended schooling often leads to later marriages. However, the effect of each on the respondents' *ideal family size* proves to be significant after controlling for others. Among the three of them, *place of residence* has no doubt the most remarkable influence. This is actually not surprising, given that this dummy variable represents all the discrepancies between rural and urban places except for those concerning *schooling* and *age at first marriage*. It would be interesting to pinpoint other possible dimensions

that help explain the rural-urban divide on fertility preferences, such as income, cost of living, educational expenses and exposure to health services. It would then be possible to

Table 5 Poisson Regression Outcomes for the Current Number of Children a Woman Has in 1993 and 2004

	1993 Survey		2004 Survey	
	Model 1	Model 2	Model 1	Model 2
Levels of permissiveness				
Medium	.19 ***	.21 ***	.16 ***	.18 ***
High	.38 ***	.29 ***	.25 ***	.27 ***
Urban		-.23 ***		-.22 ***
Years of schooling		-.01 ***		-.02 ***
Age		.03 ***		.03 ***
Age at first marriage		-.03 ***		-.02 ***
Intercept	1.11 ***	.35 *	.73 ***	.17
Pearson Chi-square	1679.17	874.61	1066.80	684.10
Chi-square/DF	.66	.39	.40	.27
Log Likelihood	-1632.08	-1147.74	-2341.00	-2075.68

* $p < .05$ ** $p < .01$ *** $p < .001$

assess the relative importance of various factors and identify the most powerful forces that contribute to an ideational change. It follows that the government could have the alternative to manage people's reproductive choices indirectly through these channels

rather than rely on a stringent family planning policy. Once ideal family size is maintained at an adequately low level, to curb population growth and ease its pressure on socioeconomic development will cease to be a top political concern, for people will choose to have fewer children and keep the total fertility rate at a low level even in the absence of the family planning policy. Unfortunately, while survey questions cover such aspects as income, cost of living, educational expenses and exposure to health services, the CHNS data does not offer adequate information in these areas, either due to a huge number of non-responses or the rarity of occurrences in some sub-categories in such a small analytical sample.

The *age* coefficient also deserves some attention. In this cross-sectional examination, it seems that younger women have a smaller ideal family size than their older counterparts. It further points to a possibility that the younger generation in contemporary China is not as bound by traditional values as the earlier cohorts (Ding and Hesketh 2006). I would later pool the data for both surveys together in order to further look into the age effect, but even that simply provides a rough illustration of the possible ideational change across cohorts. A more accurate estimate calls for a detailed longitudinal analysis. The same story applies to *age at first marriage*. In order to determine whether marriage is delayed until older ages over time, more information on demographic patterns and practices is required. Even though a longitudinal study is out of the question given the data used in this paper, due to the rolling samples in this case, a comparison of the outcomes in 1993 and 2004 would achieve a similar purpose, as it

shows whether there is any significant change in the impact of a certain predictor on the

dependent variables between the two time points.

Table 6 Poisson Regression Outcomes for Ideal Family Size in the Absence of the Family-Planning Policy

in 1993 and 2004

	1993 Survey		2004 Survey	
	Model 1	Model 2	Model 1	Model 2
Levels of permissiveness				
Medium	.20 ***	.22 ***	.23 ***	.24 ***
High	.38 ***	.29 ***	.27 ***	.27 ***
Urban		-.20 ***		-.21 ***
Years of schooling		-.01 **		-.02 ***
Age		.03 ***		.01 ***
Age at first marriage		-.03 ***		-.01 ***
Intercept	1.16 ***	1.41 ***	.90 ***	.69 ***
Pearson Chi-square	1335.04	806.50	960.25	744.94
Chi-square/DF	.59	.39	.36	.30
Log Likelihood	-1316.06	-979.70	-2094.07	-1928.19

$* \ p < .05 \ ** \ p < .01 \ *** \ p < .001$

Differences in terms of the absolute level and the relative importance of the

predictors over time

In order to pinpoint any potentially meaningful change that happened between 1993 and 2004, I would follow three steps. Firstly, I will pool the data for the two surveys together and create a dummy identifier *time* so as to distinguish one from the other (*time* equals 0 if the information came from the 1993 study and equals 1 otherwise). Next, I will regress each independent variable involved in the previous models on *time* to gauge significant differences in their absolute levels between 1993 and 2004. Logistic regressions are used for categorical predictors while OLS regressions are applied to the interval-level variables. Detailed outcomes are presented in Table 7. Lastly, I will re-estimate the Poisson coefficients for my two dependent variables, *the current number of children a woman has* and her *ideal family size*, using the pooled data. Hierarchical models which include the time identifier alone, the time identifier and the policy

Table 7 Regression Outcomes for all Independent Variables with *Time* as the Single Predictor

OLS Regression		Logistic Regression	
Variable	Coefficient	Variable	Coefficient
Years of schooling	1.63 ***	Low level of permissiveness	-.16 **
Age	2.17 ***	Medium level of permissiveness	.16 **
Age at first marriage	.29 **	High level of permissiveness	.02
		Urban	-.15 *

*p < .05 ** p < .01 *** p < .001

indicators, demographic controls in addition to the time identifier and the policy indicators, and all these variables together with corresponding interactions separately are examined in both cases. While the models without interaction terms assume that the

effects of each predictor on the outcomes remain constant over time, those with relevant interactions aim at highlighting any independent variable whose impact has changed during the decade between the two surveys.

Judging by the zero-order results in which *time* serves as the single explanatory variable, there are a number of interesting patterns concerning the changes that have happened during the period from 1993 to 2004. The absolute levels of *years of schooling* and *age at first marriage* increase by 1.63 and .29 years on average respectively, offering some support for the spread of mass education as well as for a potential trend to delay marriage until older ages. The women who participated in the 2004 survey are 2.17 years older than those in the 1993 survey. Besides, the odds of their being exposed to a family planning policy with a medium level of permissiveness are higher in 2004 and the odds of their being placed in a context of a low level of permissiveness are smaller. The odds of their being under a policy with a high level of permissiveness illustrate no significant change over time. This is worth mentioning in that the additional province, Liaoning, examined in 2004 fell into the category of a low level of permissiveness and the number of respondents in this category is greater when compared with the 1993 figures (refer to Tables 1 and 2). It would also be relevant to notice that the odds of an urban registration status are lower in the later survey. Given the known fact that China witnesses rapid industrialization and urbanization, it is meaningful in that it reveals differences in the rural/urban composition for this particular study over time and offers further evidence for a fertility decline in China — even with rural areas likely to be subject to traditional values, economic difficulties and less stringent family planning policies, *time* turns out to

be a consistent predictor of actual as well as ideal family size (models 1 to 3 in Tables 8 and 9). Both the achieved fertility and the ideal fertility dropped significantly from 1993 to 2004, and it would be fair to assume that such decreases would have larger magnitudes if the rural/urban compositions of the samples were comparable.

The regression outcomes for the pooled data, assuming constant effects of all independent variables show similar results to those examined for the two time points

Table 8 Poisson Regression Outcomes for the Current Number of Children a Woman Has

With the Pooled Data

	Model 1	Model 2	Model 3	Model 4	Model 5
Time	-.26 ***	-.25 ***	-.28 ***	-.22 ***	-.15
Levels of permissiveness					
Medium		.18 ***	.20 ***	.19 ***	.21 ***
High		.32 ***	.29 ***	.38 ***	.29 ***
Urban			-.22 ***		-.23 ***
Years of schooling			-.02 ***		-.01 ***
Age			.03 ***		.03 ***
Age at first marriage			-.03 ***		-.03 ***

Table 8 (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
Interactions					
*Medium * Time*				-.03	-.03
*High * Time*				-.14 *	-.02
*Urban * Time*					.00
*Years of schooling * Time*					-.01
*Age * Time*					-.01 +
*Age at first marriage * Time*					.01
Intercept	.40 ***	.80 ***	.13	.89 ***	.21
Pearson Chi-square	2890.65	2748.05	1562.98	2745.97	1558.71
Chi-square/DF	.56	.53	.33	.53	.33
Log Likelihood	-4035.90	-3975.28	-3226.02	-3973.09	-3223.42

$+ p < .10$ $* p < .05$ $** p < .01$ $*** p < .001$

separately (models 2 and 3 in Tables 8 and 9), so I will not go into details to explain the

directions as well as the magnitudes of their impact on the *current number of children a*

woman has and her ideal fertility level. Instead, I will focus on the interaction terms

included in the analyses so as to gauge possible changes in the relative importance of

these predictors on the dependent variables (models 4 and 5). Based on the design of this

study, the sign of a certain interaction term would be positive if the corresponding

explanatory variable has a stronger impact on the outcomes in 2004 than in 1993. On the

other hand, if the effect of the factor becomes weaker during these 11 years, its

interaction with time would have a negative sign. In terms of the policy impact, results show that the effect of the local family planning policies remains equally important in the later survey where the women are subject to regulations with a medium level of permissiveness, whether controlling for other variables or not. In places with the most permissive family planning policies, the later survey saw a significantly weaker policy effect on both the actual and the ideal family size, without incorporating the socioeconomic and demographic indicators in the models. When the control variables are held constant, the compromised importance of the policy impact observed in the previous models vanished. It is the complicated interplay between socioeconomic and demographic factors, and the policy indicators that led to the overestimation of such a change in the downward direction. The effect of the fertility regulations, in fact, as is shown in the adjusted models, remains persistently meaningful in people's reproductive behaviors and preferences.

In terms of the control variables, residential location and educational attainment are consistently relevant while *age at first marriage* grows more important in shaping the desired family size and *age of the respondents* becomes less significant in both cases. Even though older women tend to have more children and prefer larger families in both cross-sectional examinations, the impact of age is weaker over time, and thus points out the likelihood that the population becomes more homogeneous in terms of their reproductive behaviors and preferences across age groups. At the same time, factors that have contributed greatly to the demographic transitions all over the world, such as urbanization, mass education and delayed marriage, are persistently important in

determining fertility levels: the magnitudes of the effects either remain constant or grow even larger. It is particularly interesting that such changes are more conceivable on the ideational level, for the declining impact of age is significant by a more stringent statistical standard and the growing influence of *age at first marriage* is only significant in the models oriented towards ideal family size. In line with Merli and Smith's (2002) rationalization argument, a lot of researchers agree that instead of the ideal family size shaping people's reproductive patterns, it is actually the other way around. In other words, rather than make their fertility decisions according to previous intentions, people tend to adjust the optimal number of children they want to have to what they have already achieved as they engage in reproductive activities. At the same time, in order to evaluate the potentiality for policy relaxation, it is necessary, though somewhat artificial, to separate ideal family size from the actual number of children the average woman bears and assess its dimension independently. The declining discrepancies across age groups in their reproductive preferences and the increasing influence of delayed marriage could be seen as indicators of an ideational stance that further deviates from the traditional value on extended families in the general population. Together with the spread of mass education (Table 7), urbanization, and economic and social development, it is not unreasonable to assume that the demographic path in China has begun to converge with other countries where there is no officially specified restraint on the maximum number of children a couple could have. Bearing this in mind, I will now move to an evaluation of the feasibility to further relax the family planning policies.

Potentiality of further relaxation of the family planning policies

Table 9 Poisson Regression Outcomes for Ideal Family Size in the Absence of the Family-Planning Policy With the Pooled Data

	Model 1	Model 2	Model 3	Model 4	Model 5
Time	-.18 ***	-.17 ***	-.19 ***	-.17 ***	.06
Levels of permissiveness					
Medium		.22 ***	.23 ***	.20 ***	.22 ***
High		.32 ***	.29 ***	.38 ***	.29 ***
Urban			-.20 ***		-.20 ***
Years of schooling			-.02 ***		-.01 **
Age			.02 ***		.03 ***
Age at first marriage			-.02 ***		-.03 ***

While the family planning policy in China impacts people's reproductive behaviors and fertility preferences, to assess the feasibility of its relaxation is another story, as it requires an examination of the practical significance of the statistics as well as an evaluation of the trade-off between gains and losses. Going back to the cross-sectional results as well as the analysis for the pooled data, *level of permissiveness* is a consistentlysignificant predictor when statistical criteria are applied, whether it is in the case of the behavioral estimate or the ideational measure. Yet this does not necessarily

Table 9 (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
Interactions					
Medium * Time				.03	.01
High * Time				-.11 +	-.02
Urban * Time					-.01
Years of schooling * Time					-.01
Age * Time					-.01 ***
Age at first marriage * Time					.02 *
Intercept	.52 ***	.95 ***	.61 ***	1.81 ***	.70 ***
Pearson Chi-square	2454.68	2298.54	1579.85	2295.30	1551.44
Chi-square/DF	.50	.47	.34	.47	.34
Log Likelihood	-3484.02	-3412.23	-2921.77	-3410.13	-2907.89

$+ p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

translate into its importance in reality. For one thing, fertility behaviors and preferences operate under the influence of a large number of economic, social and cultural forces, whose directions and magnitudes vary greatly. The strictness of the family planning policy alone simply accounts for a very small percentage of the overall variations (Chi-square statistics equal 1679 and 1335 for *current number of children* and *ideal family size* respectively in 1993, 1066 and 960 respectively in 2004, and 2748 and 2299 respectively for the pooled data). For another thing, when areas on both ends of the permissiveness scale are compared, there is no alarming sign for a potential baby boom when the policy

is relaxed. Even though women in places where the policy is highly permissive tend to have more children and want more children, the mean achieved family size and *ideal family size* still stay round replacement level in 2004 (1.90 and 2.53 respectively, as compared to 1.75 and 5.10 respectively in 1993). Not only are remarkable declines in terms of both fertility indicators observed over time (model 1 in Tables 8 and 9), but the gap between the achieved family size and ideation figure is also small enough to ease concerns about a reversal in the demographic trend back into the stage of rapid population growth.

The picture is even more reassuring when economic advancement and ideational transformation are taken into consideration, as the changes involved, such as a higher standard of living, greater educational opportunities and increasing female labor force participation, would normally depress fertility. In the cross-sectional examinations, the incorporation of the few socioeconomic indicators — urban residence and years of schooling, together with the demographic controls of age and age at first marriage, greatly improves the explanatory power of the models (Chi-square statistics equal 875 and 807 for *current number of children* and *ideal family size* respectively in 1993, 684 and 745 respectively in 2004, and 1580 and 1563 respectively for the pooled data). Moreover, as I already mentioned in my discussion of cross-time comparisons, the effects of these social and economic variables remain influential over time. With China on its way to further industrialization and more socioeconomic factors at play than those covered in the present study, it would be fair to suggest that such forces will continue to be effective, if not more powerful, in governing fertility levels.

Much evidence provided in this paper supports the idea that China more and more resembles those countries which experience fertility declines without any stringent family planning policies: both the achieved and potential family size dropped over time and stayed around replacement level; the influence of the fertility regulations was not remarkable in its absolute sense (e.g., the mean ideal family size goes up by .64 and .75 children respectively under policies with a medium level of permissiveness and a high level of permissiveness); and socioeconomic factors consistently contribute to fertility declines (e.g., Potter et al. 2002). Besides, there is no considerable unmet demand for children, judging by the gap between the realized fertility and the ideal family size. Again, while people's reproductive preferences seem to follow their achieved fertility, given the current socioeconomic and demographic reality in China, it is hard to imagine that the fertility trend would be completely reversed with a less stringent family planning policy. To put it simply, the value on extended family is not likely to become dominant in an extraordinary proportion of the Chinese population again even if the policy were to be relaxed. Given such pressing concerns as population aging, an imbalanced sex ratio and a decreasing labor force (Merli and Smith 2002; Murphy 2003; Wang 2005), which result from the current family planning policy, maintaining the status quo could lead to problems that compromise or even outweigh the benefits of a smaller population. On the other hand, a relaxation of the fertility regulations should be approached extremely cautiously, not only because of the large population base and its translation into an impressive number of births from a even a seemingly insignificant percentage increase,

but also because of the consistent contribution of the family planning policy to a lower fertility and a deflated ideal family size.

Conclusion and limitations

Given the difficulty to study a counterfactual and the great regional variations not only in terms of economic growth, social conditions, and cultural backgrounds, but also in terms of policy stipulations, the effectiveness the family planning regulations in China poses an interesting intellectual challenge to the academic circles. In this paper, I depended on Attane's (2002) classification scheme to measure the level of permissiveness for a certain local policy, and evaluated the impact of such political interferences on the achieved fertility and the ideal family size. The effect of the family planning policy, while not remarkable in the absolute sense, is confirmed both in the cross-sectional analyses and the cross-time comparison. At the same time, socioeconomic advancement appears to be a major driving force of a low fertility rate in contemporary China. Even though the *ideal family size* appeared to be larger than the achieved family size, it does not seem likely that the total fertility rate would exceed the replacement level by a huge margin even if the policy were relaxed. Such results combined seem to provide some support for a cautious relaxation of the family planning policies.

At the same time, even though the focus on a smaller sample helps to highlight the most significant mechanisms, it calls for some caution when the results are generalized to the general population. In the context of significant regional variations in demographic,

economic, social, cultural and political characteristics, to what extent the findings can be replicated on a larger scale will require further examination of a sample that are more nationally representative, have more respondents and provide richer information about socioeconomic indicators. Moreover, since the ideational aspect is notoriously hard to assess, the reliability of the measure of ideal family size might be open to debate. Qualitative and ethnographic research will be useful in this regard in that it shifts the attention from aggregate patterns to individual outcomes, and is able to collect better data concerning such unobservable variables as motivations. Another limitation to this study is that the dataset lacks insight into noncompliance with or even resistance to the family planning policies, the addition of which will further contribute to the understanding of the demographic patterns in contemporary China and the feasibility for policy relaxation.

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