Chapter 2
China's Low Fertility: Evidence from the 2010 Census

Zhigang Guo and Baochang Gu

2.1 Introduction

After four decades of strict birth control, the rapid growth of China's population has been curbed. According to the official figures, the total fertility rate dropped below replacement level in the early 1990s, and has continued to decline since then, remaining at a very low level since the early 2000s. This long-lasting low fertility is therefore expected to have significant consequences for China's demographic future, especially in terms of the decline in working-age population and the acceleration of population ageing.

As early as 1980, when the one-child policy was enforced, the Central Committee of China's Communist Party (CCP) had anticipated rapid demographic ageing and pledged to take preventive measures, among which the possibility of relaxing the birth control policy "after thirty years" (CCP 1980). In 2000, however, the Central Committee of the CCP and the State Council issued the "Decision on the strengthening of population control and family planning to stabilize the low fertility rate", which was reiterated in 2006 (CCP 2000; CCP 2006). It was not until 2012 and the 18th national congress of CCP that the official discourse began to change. It now calls for "adhering to the basic national family planning policy, improving the quality of births, and gradually perfecting population policies to promote a long-term and well-balanced development of the population", with the notable omission of any further reference to the need to "stabilize low fertility" (Hu 2012). This change in the official discourse is clearly linked to the concomitant release of the results of China's sixth national population census conducted in 2010 (NBS 2011; PCO 2012), which, among other results, revealed acute population ageing, occurring even faster than expected.

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This chapter first looks at the reasons behind this poor understanding of the population situation, and defends the hypothesis that official figures have recurrently over-estimated fertility. It will then examine in greater depth the recent fertility trends and patterns as they appear from the available sources, focusing in particular on the recent postponement of marriage and childbearing. This will be followed by a discussion of the reliability of the 2010 census data and, in particular, of the plausibility of widespread under-reporting of births, a hypothesis still largely supported by Chinese officials.

2.2 Recent Official Population Estimates

The 2010 population census indicates that on 1 November 2010, the total population of China was 1.34 billion, among which 16.6% were children (aged 0–14 years), 70.1% were working-age adults (aged 15–59 years) and 13.3% were elderly people (aged 60 years and over), with 49.7% of Chinese now living in urban areas (cities and townships). These census results underline trends that appear to be more pronounced than was anticipated by the previous official population plans, i.e. fertility reduction, population ageing and urbanization. If we consider that these census results are reliable, as discussed later, they suggest that the population estimates made in past decades were seriously inaccurate and misleading, in particular those related to fertility.

Inset 2.1 Sources of National Demographic Data in China

In China, three state agencies collect demographic data at the national level: the Ministry of Public Security (*Guojia gong'an bu*), the National Bureau of Statistics (*Guojia tongji ju*) and the National Health and Family Planning Commission (*Guojia weisheng he jihua shengyu weiyuanhui*), formerly the National Population and Family Planning Commission.

The Ministry of Public Security provides vital statistics (*huji*) based on the household registration system. The National Bureau of Statistics is responsible for the organization of population censuses (*renkou pucha*), intercensal population sample surveys (*renkou chouyang diaocha*), and annual surveys on population change. Since the founding of the People's Republic of China in 1949, six population censuses (1953, 1964, 1982, 1990, 2000 and 2010) and three intercensal sample surveys (1987, 1995 and 2005) have been organized. The National Health and Family Planning Commission provides independent statistics delivered annually, both at the national and provincial levels, and also regularly organizes national surveys on fertility, birth control and reproductive health (1982, 1988, 1992, 1997, 2001, and 2006) describing, among other features, the conditions of fertility and reproductive health of Chinese women.

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Table 2.1 Unadjusted and adjusted population figures for 2000, 2005 and 2010

	10th five-year population plan (2001–2005)			11th five-year population plan (2006–2010)		
	Population in 2000 (millions)	Population in 2005 (millions)	Difference (millions[2])	Population in 2005 (millions)	Population in 2010 (millions)	Difference (millions)
Unadjusted data	1,265	1,308	43	1,308	1,340	32
Figures used or obtained in the projections	1,283	1,331	48	1,308 (No adjustment)	1,360	52
Difference (in million)	18	23	–	–	20	–

Sources: PCO (2002, 2012); NBS (2007a); NFPC (2001); NPFPC (2006)

In fact, almost all national population censuses and surveys conducted in the past twenty years reported a very low total fertility rate (TFR). But these results were always considered unreliable because flawed by serious under-reporting of births, in line with the prevailing attitude among both the relevant political authorities and most Chinese scholars, who refuse to acknowledge the possibility of a very low fertility rate in China. The census and survey figures were therefore adjusted using indirect estimation methods which increased the number of births and raised the TFR to about 1.8. Such adjustments have been taken for granted in most of the recent official population projections formulated by the relevant government departments, leading to a systematic underestimation of the ageing process and to misleading population forecasts, as in the research report on China's national strategy on population development (NPDS 2007).

For instance, the 10th Five-year Population Plan (2001–2005) (NFPC 2001) used the official TFR of 1.8 to elaborate population estimates and adjusted the population observed at the 2000 census (1,265 million) by + 17 million (to reach a total of 1,283 million), reflecting the Chinese government's lack of confidence in the census data. On this basis, this Plan projected a total population of 1,331 million for 2005 (Zhuang and Zhang 2003). But it appeared later that this projected figure was well above that revealed by the 2005 Nationwide 1 % Population Sample Survey which found a total of just 1,308 million, a difference of 23 million (Table 2.1). While the 10th Five-year Population Plan called for population growth between 2000 and 2005 to remain below 56 million, the apparent growth (i.e. the difference between the adjusted figure of 1,283 million for 2000, and the unadjusted figure of 1,308 million for 2005) was much lower, at only 25 million. Even when comparing the unadjusted results, the growth between 2000 and 2005 was just 43 million. Such a discrepancy provides evidence that the adjusted population used as the basis for these projections, and in particular the fertility assumptions, were not very realistic.

In the 11th Five-year Population Plan (2006–2010), the population used as a basis for the projections was the unadjusted figure obtained from the 2005 Nationwide 1 % Population Sample Survey, but the fertility rate was again assumed to be 1.8

children per woman. According to these projections, the population would therefore have reached 1,360 million in 2010 (NFPC 2006). However, the total population reported at the 2010 population census was 1,340 million, a difference of 20 million (Table 2.1). Thus, while the average annual population growth was expected to be around 10 million, it in fact reached only around 6 million. Again, significant discrepancies appear between the projected population and the unadjusted census data, again questioning the accuracy of the assumptions used for the projections.

2.3 Fertility Estimates

While the Chinese government has based its statistics on a TFR of 1.8 children per woman since the mid-1990s with no empirical evidence to justify it, most of the other recent available data, including those from the population censuses, the annual surveys on population change conducted by the National Bureau of Statistics (NBS), and the surveys conducted by the National Population and Family Planning Commission, all reveal a much lower TFR which plateaus at around 1.3–1.5 children per woman (Fig. 2.1). In 2010, the 6th census revealed an even lower TFR, of only 1.19 at the national level. Even when taking into account a possible underestimation of fertility at the 2010 census due to under-reporting of births, back-projections indicate nevertheless that the TFR in the preceding years was well below the official figure of 1.8 (Guo 2011; Zhu 2012; Wang et al. 2013). These results indicate that China is now among the very few countries in the world with "lowest-low" fertility, together with Japan (around 1.3 in 2015), Republic of Korea (1.3), the Russian Federation (1.4), Spain (1.4) and Germany (1.4) (UN-WPP 2012). Considering the size of China's population (still 19% of the world population in 2015) and its overall level of socioeconomic development, these results are somewhat alarming and point up the urgent need for a reassessment of the actual situation.

Figure 2.1 provides a comparison of the TFRs as they appear, or are reconstructed, from the most recent available sources. They are all consistent with the results of the back-projections based on the 2010 census data. Indeed, they all indicate that China's TFR dropped below replacement level in the early 1990s, and then remained at around 1.4–1.5 in the following 15 years. The only exception is the survey conducted in 2006 by the NPFPC, which provides a comparatively high TFR, close to the official figure of 1.8 children per woman. Even though the results of this survey are inconsistent with those from the other available sources, they nonetheless served as an argument for the government to advocate a strengthening of the family planning programme so as to maintain fertility at a low level by all means (CCP 2006). Even after several Chinese scholars had questioned the reliability of the 2006 survey results and argued that fertility was overestimated due to sampling bias (Guo 2009; Zhao and Guo 2010), this survey nonetheless continued to be used as justification for the official figure of 1.8, and therefore contributed to maintaining uncertainty about actual fertility trends. Nevertheless, as demonstrated below, the

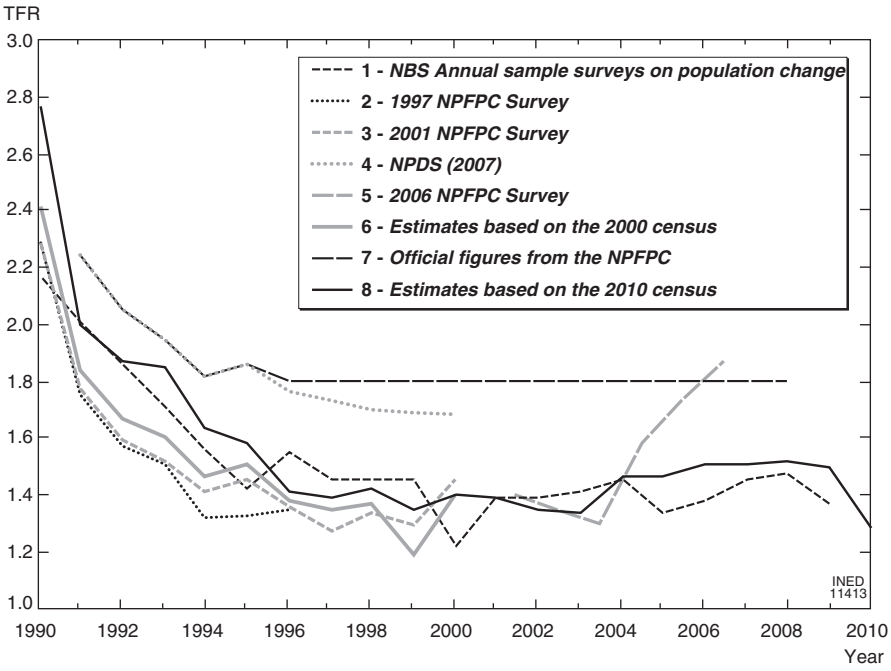

Fig. 2.1 Fertility (TFR) trends as observed from various sources, 1990–2010 (Sources and notes: *(1)* National Bureau of Statistics. Annual sample surveys on population change (NBS 1990–2010); *(2)* Authors' calculations based on the data from the 1997 National Population and Reproductive Health Survey, National Population and Family Planning Commission; *(3)* Calculations by Ding (2003) based on the data from the 2001 National Population and Reproductive Health Survey, National Population and Family Planning Commission; *(4)* NPDS (2007). Medium Scenario; *(5)* See Zhang (2008); *(6)* Estimates based on the 2000 census (NBS 2007b); *(7)* Official figures from the NPFPC (2009); *(8)* Estimates by Guo (2011) based on the 2010 census data.

2010 census once again provides further evidence of the low fertility prevailing in China since the mid-1990s.

Inset 2.2 China's Family Planning Policy: An Overview

At the Communist takeover in 1949, the new Chinese government had no intention of regulating population growth. Far from viewing a large population as problematic, socialist ideologues saw it as a force for economic prosperity. Moreover, due to the absence of reliable sources, very little was known at that time about the demographics of the world's most populous country. The early years of the regime were therefore marked by openly pro-natalist

rhetoric, and its vast population was considered as the most precious capital of revolutionary China.

The first population census (1953) revealed that the population totalled 590 million, 100 million more than expected. This sparked fears that excessively rapid population growth would compromise economic development. Only then did young socialist China engage in a Malthusian debate. Temporarily convinced by birth-control advocates, Mao Zedong declared in 1956: "Except for areas inhabited by national minorities, it is necessary to publicize and popularize fertility regulation and promote birth control in all densely populated regions." (Zou 1986, p. 4). A few months later, the first birth-control campaign was launched. The contradiction between population growth and economic development was abruptly denounced. China started producing contraceptives and liberalized sterilization and abortion.

Owing to the lack of efficient methods, the shortage of skilled personnel, and the traditional Chinese reluctance to discuss sexual matters, family-planning propaganda remained confined to urban areas. This initial attempt had no visible effect on fertility. The anti-rightist movement unleashed in 1957 put an end to this initiative, and population growth ceased to be regarded as a problem per se. Industrial development was restored as a priority. With the Great Leap Forward, launched in 1958, the authorities feared that the labour supply would fall short of what was needed to build socialism. Efforts to regulate fertility suddenly stopped, and contraceptive production was halted.

A few years later, however, birth control was back on the agenda. In the years (1959–1961) that followed the Great Leap Forward, the Great Famine caused an estimated 30 million deaths, exacerbating the imbalance between food supply and population. The birth rate plunged. In 1960, deaths even exceeded births, causing a net population decline of 3 million people. Then came the recovery. The millions of children whose conception had been postponed because of famine, political instability, and the economic crisis swelled the ranks of already large cohorts. China registered an exceptional baby boom in the early 1960s, with 25–30 million children born every year. The government discreetly drew the lessons from the Great Leap Forward. It made agriculture a priority again, and the problems of population growth were no longer ignored.

In 1962, a second campaign was launched. To reduce the number of births, the authorities opted for delayed marriage and wider distribution of contraceptives. Abortion was further liberalized in 1962: it could now be performed at the sole request of the pregnant mother and it was free if she was married. The intra-uterine device (IUD) was introduced and vasectomy strongly encouraged. This second attempt at birth control, better organized and more pragmatic, was relatively successful in some big cities. But before it had a chance to spread to rural areas, it was swept away by the Cultural Revolution launched in the summer of 1966.

At the start of the 1970s, the demographic transition was still modest. Mortality was declining, but the birth rate kept rising. With fewer deaths and more births, population growth peaked at more than 2% per year, hitting 2.8% in 1968. Twenty million people were being added each year. After having been forgotten for some years, birth control became a national priority again. In 1971, the Council of State's Directive 51 marked the official launch of the third birth-control campaign, which would be pursued relentlessly in the following decades.

This third family planning campaign was a turning point in China's demographic history. Measures were introduced with the aim of controlling the proximate determinants of fertility: age at marriage, contraceptive use and, indirectly, abortion. The regulations made public in 1973 advocated late marriage, birth spacing and fewer children, although requirements varied for different population categories. Aware of the diversity of settlement patterns, cultures, production modes and socioeconomic conditions across China, the campaign promoters distinguished between the urban population, the rural population and ethnic minorities. Urban residents were subject to the strictest rules: women were expected to wait until age 25 to marry and men until 28, and couples were expected to have no more than two children. Less drastic rules were imposed on rural residents: a minimum age at marriage of 23 years for women and 25 for men, and a maximum of three children. However, both city and rural residents were required to space births by three or four years. No instructions were established for ethnic minorities at that time. Their numbers were small and they were mainly confined to sparsely populated peripheral regions. Owing to their relatively small share in the total population, they did not have a major role to play in achieving the national target of population control.

As a result of these measures, the fertility of Chinese women was more than halved in less than a decade, from 5.7 children per woman in 1970 to 2.7 in 1978. By the late 1970s, the threat of unsustainable population growth had thus diminished. But this decline was nevertheless considered insufficient, especially as the large cohorts born in the 1960s were reaching childbearing age, which presaged another rise in the birth rate, incompatible with the goal of economic modernization. The reform and opening up policy introduced in 1978 by Deng Xiaoping, included population control to facilitate economic growth (Chen 1979). To meet that target, the new family planning policy, officially announced in 1979, introduced the draconian norm of one child (*du sheng zinü zhengce*), with which 95% of city dwellers and 90% of peasants were expected to comply. Couples were required to make a commitment to having only one child by signing a "one child certificate" in exchange for various benefits, which varied from place to place.

During that period, however, the incompatibility of population targets with families' strategies fuelled strong resistance to family planning, particularly

in rural areas. The government therefore relaxed the one-child policy in 1984, and since then, the family planning policy has not been applied uniformly (Yin 1995). In the countryside, couples are generally allowed to have a second and even a third child, especially some ethnic minorities. Eligibility for a second child is not the same across the country, however, with criteria varying across provinces, and sometimes even from one district or one village to another. Under the current policy, urban couples are entitled to have a second child only if either the father or the mother are themselves an only child.

Given China's low population growth, its very low fertility, and the fast population ageing, the wisdom of pursuing a strict family planning policy is increasingly questioned. However, at the time the present book went to press, relaxation of the one-child policy was still under debate.

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References

Chen, M. (1979). Shixian si ge xiandaihua, bixu you jihua de kongzhi renkou zengzhang. (Achieving the Four Modernizations requires planned control of population growth). *Renmin ribao* (*People's Daily*), 11 Aug 1979.

Yin, W. (1995). Lun zhongguo shengqu renkou kongzhi yu zhengce zhuanhuan de fei tongbu xing (Lack of synchronization between political change and population control in Chinese provinces). *Renkou xuekan* (*Demographic journal*)*, 2*,3–8.

Zou, P. (1986). Guanyu jianguo chuqi woguo renkou zhengce zhuanbian de hui gu yu sikao. (Examination of changes in Chinese population policy after the Revolution). *Renkou yu jingji* (*Population and Economics*), *6*, 8–11.

2.4 Further Evidence of Low Fertility in Today's China

As stated above, the total fertility rate was 1.19 children per woman according to the 2010 census, a level far below replacement level and the lowest level ever reached in China (in comparison, the 2005 Nationwide 1 % Population Sample Survey gave a TFR of 1.34, and the 2000 population census a TFR of 1.22) which, again, was seriously questioned (Wang and Ge 2013; Tao and Zhang 2013; Yang and Zhao 2013). However, as indicated in Fig. 2.1, back-projections based on the 2010 census data give results consistent with the very low fertility levels found in the nationwide surveys of the past two decades. The 2010 census results therefore not only provide further evidence of the very low fertility that has prevailed in China since the mid-1990s, but also cast further doubt on the accuracy of the official fertility estimates. A more detailed analysis sheds light on some underlying factors that support the fertility decline.

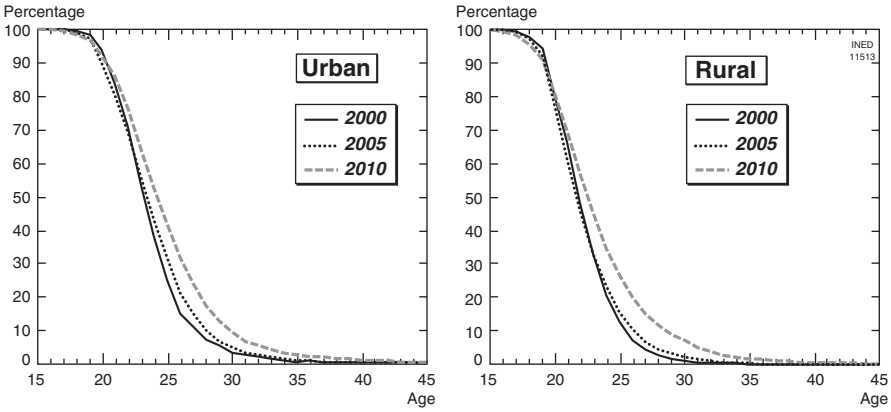

Fig. 2.2. Age-specific proportions of never-married urban-rural women in 2000, 2005 and 2010 (Sources: PCO 2002, 2012; NBS 2007a)

2.4.1 Marriage Postponement

Marriage postponement, generally followed by a postponement of childbearing, is a decisive factor in fertility transition. In China's dual society, where urban areas are much more developed than most rural ones, the social change that leads to change in marriage and fertility behaviours first occurred among urban residents, who were then followed by their rural counterparts.

Figure 2.2 presents the proportions of urban and rural never-married women in different years. While little change is observed in the age-specific proportions of never-married rural women between 2000 and 2005, more significant change in marriage behaviours appears for rural women aged 20–35 between 2005 and 2010. The change is more striking for the younger rural women aged 22–25, i.e. at the peak reproduction ages, with a proportion of never-married that increased by around 10 percentage points during these five years.

The proportions of never-married among urban women increased even more rapidly between 2000 and 2010, although overall fertility does not appear to have been seriously affected, for various reasons. First, as demonstrated below, a fertility recuperation effect is observed in urban areas, after a period of significant postponement in the older cohorts, which has partly offset the effect of postponed marriage and childbearing in the younger cohorts. Second, it is likely that the increasing number of migrants moving from rural to urban areas positively influences overall urban fertility as migrants have more children on average than urban couples (although they have lower fertility than their rural counterparts).

Table 2.2 Unadjusted TFR and parity-specific fertility rates by place of residence (urban/rural) in 2000, 2005 and 2010

Data source	Place of residence	Parity-specific fertility rates TFR(i)			
		1	2	3+	TFR
2010 census	Urban	0.69	0.26	0.04	0.98
	Rural	0.77	0.54	0.13	1.44
	China	0.73	0.38	0.08	1.19
2005 Nationwide 1% population sample survey	Urban	0.80	0.22	0.02	1.04
	Rural	0.99	0.56	0.10	1.65
	China	0.89	0.38	0.06	1.34
2000 census	Urban	0.77	0.14	0.02	0.94
	Rural	0.95	0.39	0.10	1.43
	China	0.87	0.29	0.07	1.22

Sources: PCO (2002, 2012); NBS (2007a)

2.4.2 A Decline in First-Birth Fertility Rates

Table 2.2 displays the unadjusted parity-specific fertility rates by place of residence (urban and rural) at the 2000 and 2010 censuses, and at the 2005 Nationwide 1% Population Sample Survey. It appears that between 2000 and 2005, the total fertility rate increased slightly for both urban and rural residents, due to the slight increase in TFR(1) and TFR(2). Between 2005 and 2010, however, TFR(1) decreased significantly both in urban and rural areas, while TFR(2) and TFR(3+) remained practically stable.

We note, however, that the decline in TFR(1) was greater in rural areas, where it dropped by 0.22 points between 2005 and 2010, from 0.99 to 0.77, versus a decrease of only 0.11 points for urban areas, from 0.80 to 0.69. This decline in TFR(1) is unlikely to be the result of intentional under-reporting of births, since the rates for parity one were well below 1.0, i.e. much lower than the level permitted by the government's fertility policy. In addition, although it is known that some young couples, especially in cities, are willing to give up childbearing, there is no evidence that such cases are becoming widespread nationwide. This decline might plausibly be due to a period effect, i.e. a change in childbearing timing, which is known to modify the TFR (Bongaarts and Feeney 1998; Bongaarts and Sobotka 2012; Fig. 2.3).

Delayed marriage and childbearing are common features of low-fertility populations (Guo 2008; Zhao and Guo 2010). In China, the average age at childbearing increased by two years between 2005 and 2010, from 24.6 to 26.6 years, with a particularly fast average annual increase of 0.4 years (Table 2.3). The downward trend in TFR(1) is therefore likely to be associated with the postponement of childbearing. Actually, the peak ages for reproduction have shifted from 24–25 years in 2000 to 26–27 years in 2010 in urban areas, and from 22–23 years to 23–24 years in rural areas (Fig. 2.3). In addition, it would appear that the decrease in age-specific fertility rates before age 22 is almost fully offset by the increase after age 30, which

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