China’s far below replacement level fertility:
A reality or illusion arising from underreporting of births?

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Except where stated otherwise, this thesis is my own work carried out during my PhD study from July 2002 to October 2004 at the Australian National University.

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Abstract

How fast and how far China’s fertility declined in the 1990s has long been a matter of considerable debate, despite very low fertility consistently being reported in a number of statistical investigations over time. Most demographers interpreted this as a result of serious underreporting of births in population statistics, due to the family planning program, especially the program strengthening after 1991. Consequently, they suggested that fertility fell only moderately below-replacement level, around 1.8 children per woman from the early 1990s. But some demographers argued that surveys and census may have reflected a real decline of fertility even allowing for some underreporting of births, given the consistency between data sources and over time. They believed that fertility declined substantially in the 1990s, very likely in the range between 1.5 and 1.6 by the year 2000.

The controversy over fertility is primarily related to the problem of underreporting of births, in particular the different estimations of the extent of underreporting. However, a correct interpretation of fertility data goes far beyond the pure numbers, which calls for a thorough understanding of different data sources, the programmatic and societal changes that occurred in the 1990s, and their effects on both fertility changes and data collection efforts. This thesis aims to address the question whether the reported far-below-replacement level fertility was a reality of substantial fertility decline or just an illusion arising from underreporting of births. Given the nature of the controversy, it devotes most efforts in assessing data quality, through examining the patterns, causes and extent of underreporting of births in each data source; reconstructing the decline of fertility in the 1990s; and searching corroborating evidence for the decline.

After reviewing programmatic changes in the 1990s, this thesis suggests that the program efforts were greatly strengthened, which would help to bring fertility down, but the birth control policy and program target were not tightened as generally believed. The program does affect individual reporting of births, but the completeness of births in each data source is greatly dependent on who collects fertility data and how the data are collected. The thesis then carefully examines the
data collection operations and underreporting of births in five sets of fertility data: the hukou statistics, the family planning statistics, population census, annual survey and retrospective survey. The analysis does not find convincing evidence that fertility data deteriorated more seriously in the 1990s than the preceding decade. Rather, it finds that surveys and censuses have a far more complete reporting of births than the registration-based statistics, because they directly obtain information from respondents, largely avoiding intermediate interference from local program workers. In addition, the detailed examination suggests that less than 10 percent births may have been unreported in surveys and censuses. The annual surveys, which included many higher-order out-of-plan births being misreported as first-order births, have more complete reporting of births than censuses, which were affected by the increasing population mobility and field enumeration difficulties, and retrospective surveys, which suffered from underreporting of higher-order births.

Using the unadjusted data of annual surveys from 1991 to 1999, 1995 sample census and 2000 census, this research shows that fertility first dropped from 2.3 to 1.7 in the first half of the 1990s, and further declined to a lower level around 1.5-1.6 in the second half of the decade. The comparison with other independent sources corroborates the reliability of this estimation. Putting China’s fertility decline in international perspective, comparison with the experiences of Thailand and Korea also supports such a rapid decline. Subsequently, the thesis reveals an increasingly narrow gap between state demands and popular fertility preferences, and great contributions from delayed marriage and nearly universal contraception. It is concluded that the fertility declined substantially over the course of the 1990s and dropped to a very low level by the end of last century. It is very likely that the combination of a government-enforced birth control program and rapid societal changes quickly moved China into the group of very low-fertility countries earlier than that might have been anticipated, as almost all the others are developed countries.
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<td>ASFR</td>
<td>Age-specific fertility rate</td>
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<tr>
<td>CBR</td>
<td>Crude birth rate</td>
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<tr>
<td>CEB</td>
<td>Children ever born</td>
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<tr>
<td>CPA</td>
<td>China Population Association</td>
</tr>
<tr>
<td>CPC</td>
<td>Communist Party of China</td>
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<tr>
<td>CPIRC</td>
<td>China Population Information and Research Centre</td>
</tr>
<tr>
<td>CPR</td>
<td>Contraceptive prevalence rate</td>
</tr>
<tr>
<td>CSSA</td>
<td>China Social Science Academy</td>
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<tr>
<td>DRHS</td>
<td>Demographic and Reproductive Health Survey</td>
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<tr>
<td>HDI</td>
<td>Human Development Index</td>
</tr>
<tr>
<td>ISI</td>
<td>International Statistical Institute</td>
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<tr>
<td>IUD</td>
<td>Intra-uterine devices</td>
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<td>IDFS</td>
<td>In-Depth Fertility Survey</td>
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<tr>
<td>MAB</td>
<td>Mean age at first birth</td>
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<tr>
<td>MAM</td>
<td>Mean age at first marriage</td>
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<tr>
<td>MOE</td>
<td>Ministry of Education</td>
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<td>MOH</td>
<td>Ministry of Health</td>
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<tr>
<td>MPS</td>
<td>Ministry of Public Security</td>
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<tr>
<td>NIR</td>
<td>Natural increase rate</td>
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<tr>
<td>QOC</td>
<td>Quality of Care</td>
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<tr>
<td>SFPC</td>
<td>State Family Planning Commission</td>
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<tr>
<td>SMAM</td>
<td>Singulate mean age at marriage</td>
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<tr>
<td>SRB</td>
<td>Sex ratio at birth</td>
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<tr>
<td>SSB</td>
<td>State Statistical Bureau</td>
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<tr>
<td>TFR</td>
<td>Total fertility rate</td>
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<tr>
<td>TDFR</td>
<td>Total duration-specific fertility rate</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>UNFPA</td>
<td>United Nations Population Fund</td>
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<td>United Nations Children’s Fund</td>
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<td>World Health Organization</td>
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