

Female Child Survival in China: Past, Present, and Prospects for the Future

CEPED-CICRED-INED Seminar on Female Deficit in Asia: Trends and Perspectives, Singapore, 5-7 December 2005. **Draft paper before publication; please do not use it as reference.**

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December, 2005

¹This work is supported by National Social Science Foundation of China Grants (05ARK001 and 05CRK002).

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ABSTRACT

Using data from various sources, this paper reviews studies on child survival of female children in China and intervention activities by the Chinese government to improve this survival. Discrimination against girls has existed for a long time in China, and the abnormally high sex ratio at birth and excess female child mortality in the recent years reflect women's low social status and a relatively deteriorating survival environment for girls. The discrimination against girls is both prenatal and postnatal and is manifest in sex-selective abortion of female fetuses leading to a high sex ratio at birth, and in neglect of and insufficient investment in girls resulting in excess female child mortality. The paper presents analyses of the levels, trends, and regional variations in the sex ratio at birth and excess girl child mortality, and discusses direct and indirect causes of the deteriorating survival environment for girls as well as its demographic and social implications. Prospects for the future of improvement in girl child survival in light of actions of the Chinese government are also discussed.

Keywords: *female child survival, sex ratio at birth, excess female child mortality, China*

BACKGROUND

With the development of Chinese economy and the implementation of current birth control policy, China's fertility has declined over the past several decades. Intensive son preference and discrimination against girls have always been a part of its culture throughout Chinese history. The decline in fertility is paralleled by a concurrent rise in the sex ratio at birth (abbreviated as SRB) and excess girl child mortality (abbreviated as EFCM) (Zeng et al., 1993; Das Gupta and Li, 1999; Li et al., 2004), which leads to the phenomenon of "missing girls". This not only violates the rights of survival, participation and development for girl children, but also produces a dangerously imbalanced sex ratio and concomitant demographic and social problems that threaten the long-term stability and sustainable development of Chinese society (Guo and Deng, 1995; Das Gupta and Li, 1999; Cai and Lavelly, 2003; Banister, 2004; Li et al, 2004).

The issue of girl child survival has aroused broad attention from scholars, the public, Chinese central and provincial governments, and the international community. Since the mid-1980s, many scholars have reported on this problem. Most studies to date have concentrated on the tendency, reasons and, consequences of high SRBs (Gu and Roy, 1995; Park and Cho, 1995; Zhang, 1998; Murphy, 2003; Löfstedt et al., 2004), although there are some analyses of the reasons behind Chinese EFCM (Li and Feldman, 1996; Lavelly, 1997; Li and Zhu, 2001; Li et al., 2004). Some authors (Attané, 2004; Banister, 2004) have pointed out that the girl child survival problem is a reflection of unequal rights in the first stage of human life, and that Chinese society needs to improve the well-being of females. The Chinese government in recognizing the problem has promulgated laws and regulations to protect rights of girls and improve women's status, and has also implemented some pilot programs aimed at the improvement of the environment for girl children nationwide (Li and Zhu, 2005).

This paper reviews theoretical and empirical research on China's girl child survival and analyzes the history and present status of the survival environment for female children. By comparison with relevant international experience, the paper also assesses intervention activities and policies of Chinese government and examines the prospects for girl child survival in China.

SOURCE OF DATA AND EVALUATION

The data used in this paper come mainly from the following sources: census, official statistics and ad-hoc survey data published by government bureaus, and results of previous surveys and studies.

Despite the abundant information and relatively high reliability, most of the data sources are flawed due in large part to underreporting and misreporting of births and deaths (Banister, 2004). One principal reason for misreporting births has been to

escape from punishment as Family Planning violators (Banister, 1987, 1994), but underreporting for girls is more severe than that for boys (Gao, 1993; Tu, 1993; Zeng et al., 1993; Croll, 2001; Li et al., 2005a). Underreporting, especially serious underreporting for girls brings the authenticity of reported SRBs into question. Furthermore, underreporting in births and deaths of children, to some extent, reduces the reliability of the mortality levels (Li, 1994; Li et al., 2005a). Statistical data, released by relevant government departments are also problematic. For example, there are inaccuracies in data issued by the national Family Planning department (Yu and Wang, 2001) and annual birth statistics released by the National Population and Family Planning Commission, the Ministry of Public Security, and the National Statistics Bureau also diverge. Thus the data have limited reliability.

Some literature argues that underreporting for girl infants and children is more severe than for boy infants and children (Li et al., 2005a). Other authors claim that there is no sex-selective underreporting even though the overall data quality is flawed to some extent by underreporting and inaccurate statistics (Banister, 1992; Johansson and Arvidsson, 1994), in which case the abnormally high SRBs and EFCM are not produced by flawed data, but actually reflect the facts (Banister, 2004). SRBs and EFCM are still remarkably divergent from normal even after the adjustment for underreporting and misreporting (Yuan, 2003).

HISTORIC AND CURRENT SITUATION

Discrimination against girls includes both prenatal and postnatal events that lead to the phenomenon of “missing females”. Prenatal discrimination refers to the sex-selective abortion that causes high SRB, while postnatal discrimination against girls, producing EFCM, occurs in allocation of family resources such as nutrition, food and medical care, as well as female infanticide.

Distorted SRB

Figure 1 shows that the SRB has increased steadily in the period 1950–2000. It was normal before 1980 but rose markedly from the 1980s, well above the normal value of 106 (Liu, 2004). Trends in SRB distortion also exhibit differences by parity as well as between provinces and between rural and urban areas.

Figure 1 here

Figure 2 presents parity-specific SRBs in census years, from which we can see the tendency for SRB to increase with increasing parity. Normally the SRB would decline very slightly from low to high parity (Banister, 2004), but it shows the reverse trend in China. SRB at parity 1 has been normal over all the censuses, but has far exceeded the normal value at parity 2 and above.

Figure 2 here

Figure 3, which records the SRB in 1982-2000 for urban and rural areas, shows that the SRB in rural areas is higher than that in urban areas. SRB was abnormally high in rural areas and relatively low in urban areas before the 1990s. A gradual rise in SRB year by year in urban areas reflects the overall abnormal SRB nationwide.

Figure 3 here

Figure 4 summarizes the SRB by province from the last three censuses. It shows that SRB was abnormally high in the provinces with strong traditional culture, such as Shandong, Shaanxi, Shanxi and Henan along the Yellow River Basin, and coastal provinces along the Yangtze River Basin, such as Anhui, Zhejiang, Jiangxi, Fujian and Guangdong. SRB was closer to normal in mega-cities such as Shanghai, provinces with large minority populations such as Tibet, and provinces in northeast China such as Heilongjiang. The regional pattern of SRB has not changed during the three censuses, but SRB has increased simultaneously in different regions.

Figure 4 here

EFCM

In studying EFCM, it is important to determine the normal pattern of infant and child mortality. Excess girl child mortality can be measured by comparing the actually observed pattern with the standard one (Li and Feldman, 1996). Similarly to SRB, sex ratio of child mortality is commonly used to measure excess female child mortality. In this paper we denote by SR_0 the sex ratio of male infant mortality rate to female infant mortality rate; SR_1 is the sex ratio of male child mortality rate to female child mortality rate for age group 0-4. Empirical data from many countries indicates that the normal value of SR_0 is between 1.2 -1.3, while SR_1 should be between 1.0 -1.2 (Li and Feldman, 1996). If the observed sex ratio of mortality rate is lower than the normal value, it indicates EFCM.

Sex ratio of mortality rates only roughly reflects whether the pattern of child mortality diverges from normal or not. It underestimates the actual EFCM, and cannot depict the sex difference in standard child mortality corresponding to different mortality levels (Han and Li, 1999). A more accurate index of EFCM is the index proposed by Hill and Upchurch (1995), namely the difference between observed and standard ratio of female child mortality rate to male child mortality rate. However, the standard ratio of female child mortality rate to male child mortality rate varies with the variation in observed boy child mortality level across the age group 0-4. Here we define I_0 as the excess female infant mortality index and I_1 as excess female child mortality index (aged 1-4). The closer the index is to 0, the more normal as the female infant or child mortality.

Figure 5 reports the sex ratio of infant and child mortality and EFCM. SR_0 and

SR_1 were lower than the normal values in all periods. SR_0 was slightly lower than normal before 1980s, and declined rapidly after the late 1980s, indicating an increase in excess female infant mortality after the 1980s. SR_1 was normal before the 1960s, but has been lower than 1 since the beginning of the 1960s, more than 20 years earlier than SR_0 . Excess female child mortality (aged 1-4) has existed since the 1960s, but has fluctuated at a level slightly lower than normal. I_0 and I_1 show the same trend, while I_0 shows higher female infant mortality than does SR_0 . In summary, EFCM has existed since the 1950s. The level of excess female child mortality (aged 1-4) remained relatively stable, while excess mortality for female infants has increased rapidly after the 1980s, with a shift from being lower than that for female children to being higher. This indicates that discrimination against girls has shifted from children aged 1-4 to infants in their first year of life.

Figure 5 here

Table 1 records the sex ratio of infant and child mortality and EFCM by urban-rural areas in census years in China. EFCM has risen steadily in cities, townships, and the countryside since the 1980s, but has been most serious in rural areas.

Table 1 here

Figures 6 and 7 illustrate respectively I_0 and I_1 by province in 1981, 1990, and 2000, and show the regional differences in EFCM, which is consistent with that of SRB in figure 4. Also similarly to SRB, excess female infant mortality has increased with time across the nation. Excess female child mortality has remained essentially stable in 1980-2000.

Figures 6 and 7 here

The Abnormal Sex Ratio of Children Aged 0-4

High SRB and EFCM lead to an imbalanced sex ratio in children aged 0-4. Male infants are generally weaker than females due to biological factors, and their mortality is expected to be greater at all ages. Therefore, the sex ratio of children aged 0-4 should be lower than SRB. Banister and Hill (2004) found that the sex ratio was normal for people aged 4-14, while the abnormal sex ratio was manifest at earlier ages after adjusting the data from the last three censuses. In Figure 8 we see that the sex ratios of ages 0-4 are generally normal, while the sex ratios of the high aged stages were higher in 1953 and 1964; the sex ratio was normal in 1982; afterwards there was a sharp rise in the sex ratio of the age group 0-4, with the sex ratios of younger age groups becoming higher than the higher age groups, contrasting with the condition before 1982.

Figure 8 here

The Number of Missing Females in the 20th Century

In order to measure the deficit of females caused by gender discrimination, Sen (1989, 1990) proposed the following estimate of “missing females”. Compare the sex ratios by age in an actual population with those in a model population with a normal sex ratio at birth and non-gender-biased mortality. If the actual sex ratio exceeds that in the model population, the missing fraction of the female population that would have to be alive to equate the actual with the model sex ratio can be used to estimate the missing females (Klasen and Wink, 2002; Cai and Lavelly, 2003).

Many scholars have estimated the number and percentage of missing females in China (Coale and Banister, 1994; Das Gupta and Li, 1999; Klasen and Wink, 2002; Cai and Lavelly, 2003). From the census in 1990, Klasen and Wink (2002) estimated the number of missing females to be 34.6 million, the percentage of missing females being 6.3 percent. From the 2000 census, missing females were estimated to be 40.9 million, and the percentage of missing females reached 6.7 percent. Using published statistics from the census in 2000, Cai and Lavelly (2003) estimated that there were about 12 million missing females born between 1980 and 2000 at the 2000 census and the number of truly missing females was 8.5 million. Other scholars have estimated the percentage of missing females in certain years (Coale and Banister, 1994; Das Gupta and Li, 1999). Missing girls account for the great majority of missing females in China, so “missing females” in this paper is mainly a reflection of current female child survival.

Jiang et al. (2005) systematically studied the number and percentage of missing females in the 20th century in China, and estimated total number of missing females in the 20th century from birth cohorts between 1900 and 2000 at 35.59 million, about 5 percent of the total investigated cohort. Figure 9 graphs the historical variation in the percentage of missing females.

Figure 9 here

Figure 9 indicates that the percentage of missing females differs greatly in different historical periods. Before 1949, the overall percentage of missing females was relatively high. Since 1900, the percentage first remained stable, and around 1910, the end of Qing dynasty, it reached a local peak, after which it declined again. Since 1920, the percentage of missing females has generally tended to rise. In the middle and late 1930s, the beginning of anti-Japanese war, it reached a peak again, and then began to decline. After 1949, although the percentage of missing females fluctuated, it remained generally low until the mid- 1970s. In this period, there are two local peaks: one during the Great Famine of the late 1950s and early 1960s and the other during the Cultural Revolution. Since the mid-1970s, the percentage of missing females has been continuously increasing, although the current value is still lower than the peak

for the 20th century.

Before 1980, postnatal discrimination was one important reason for missing girls; during the Qing Dynasty female infanticide was common in families from the highest social class to the lowest (Lee et al., 1994). Female infanticide and neglect of girls have become less prevalent under laws passed to promote male-female equality after the 1950s (Banister, 2004). Modern technology became widely available in rural China from the 1980s, however, and sex-selective abortion has become an important way for a family to realize their preference for a son. Thus prenatal discrimination is now the primary reason for missing girls (Banister, 2004; Qiao, 2004; Wei et al., 2005).

The Dynamics of SRB and EFCM

As mentioned above, sex-selective abortion of female fetuses, which causes high sex ratio at birth, and neglect of and insufficient investment in girls that brings about EFCM are the two mechanisms for missing girls. These two mechanisms of discrimination naturally have substitutive effects. Some scholars have argued that when the desired number and sex composition of children cannot be achieved simultaneously, an ideal sex configuration of children may be realized at smaller psychological cost when prenatal sex determination is available (Gu and Roy, 1995; Croll, 2001). For the society as a whole, there is certainly not a substitutive effect when discrimination against girls occurs in thousands of families, namely SRB and EFCM fluctuate reversibly. Also it is possible that there is an additive effect, and the two kinds of discrimination increase simultaneously elevating both SRB and EFCM. A reductive effect is also possible, namely the two kinds of discrimination might decrease simultaneously causing the decline of both SRB and EFCM. Goodkind (1996) argued that if policy restrictions on prenatal sex selection were effective, more human suffering might result if discrimination against female fetuses were to shift from the prenatal to the postnatal period (Goodkind, 1996). This position accepts as given a certain amount of son preference and daughter disfavor, and simply compares techniques on the basis of whether they are more or less humane toward the unwanted females. Therefore, sex-selective abortion is not a “replacement” for female infanticide and neglect of girls (Miller, 2001).

China’s SRB and EFCM have increased dramatically in recent 20 years. The additive effect is observed at aggregate level (Banister, 2004; Goodkind and Branch, 2005). But further study is needed at regional levels to elucidate regional differences. Figure 10 presents the dynamic of SRB and I_0 in 1981, 1990 and in 2000 from the last three censuses.

Figure 10 here

Figure 10 shows that an additive effect was observed in most provinces from

1982-1990. A notable additive effect occurred in Guangxi, Henan, Gansu, Shandong, Jiangxi and Fujian, and a substitutive effect was obvious in Jiangsu and Guizhou, while Anhui demonstrated a reductive effect. Most provinces also evinced additive effects from 1990-2000; obvious additive effects are in the provinces Guangdong, Jiangxi, Anhui, Hunan, Hubei, Hainan, and Hebei, while relatively obvious substitutive effects occurred in provinces Fujian, Henan, and Qinghai. Shandong seems to exhibit a reductive effect.

In brief, discrimination against girls has showed mainly additive effects since the 1980s, and the discrimination has intensified in recent years. Before the 1990s, the additive effect was more noticeable in the coastal southeastern provinces, while the substitutive effect was only observed in the developed provinces and less developed southwestern provinces such as Guizhou, additive effect was more likely to appear in IO. After the 1990s, the additive effect has been observed nationwide, and the number of provinces that showed substitutive effects also increased. Similar to the trend before 1990, substitutive effects of prenatal discrimination (rise in SRB, drop in I_0) are more likely to appear in developed provinces, while postnatal discrimination substitution (drop in SRB, rise in I_0) is more likely to appear in less developed areas and the minority autonomous regions. The difference in additive effect reflects regional difference in population policy and son preference while the substitutive effect shows the same difference, and indicates differences in the availability of prenatal sex determination technology (Goodkind and Branch, 2005).

CAUSES

Sources of the rise in SRB and EFCM can be classified into two categories: first, we discuss direct reasons for the rise in SRB and EFCM, and second, reasons that derive from China's culture, economics, and policies.

Direct Causes

The direct reasons for the rise in SRB can be summarized as follows: female infanticide (Coale and Banister, 1994; Banister, 2004), underreporting and misreporting for female infants (Johansson and Nygren, 1991; Zeng et al., 1993), and sex-selective abortion of female fetuses (Gu and Roy, 1995; Croll, 2001; Qiao, 2004; Li et al., 2004;). Recent studies demonstrate that it is sex-selective abortion rather than female infanticide or underreporting that causes the rise in SRB (Croll, 2001; Banister, 2004; Wei et al., 2005).

The main reason of EFCM is the inequity in medical care between male and female children (Alderman and Gertler, 1997; Hazarika, 2000; Croll, 2001). The deeply rooted son preference in China results in discrimination against girls in nutrition, preventive and curative health care, and these cause EFCM. Along with the improvement of living standard in recent years, discriminatory treatment against girls

in nutrition has not been important, but discrimination in medical care has had a significant influence on EFCM. Studies of child mortality have shown that medical treatment for boys is significantly better than for girls (Li et al., 2004). Female infanticide, however, still exists. (Banister, 2004; Li et al., 2004).

Fundamental Causes

A strict patrilineal family system has existed through most of Chinese history. Patrilineality, patrilocality and patriarchy determine the dominant status of men in inheriting property, in living arrangements, in continuity of families, and in family power structure, and result in the lower status of women (Khan and Khanum, 2000; Das Gupta et al., 2004; Li and Jiang, 2005). Son preference and discrimination against girls is also caused by the difference in value of sons and daughters in providing old-support and economic status. It is the son who provides fundamental support for his parents (Sun, 2002). Some factors in China's economic system and public policy, such as the unsound system of social security, have also stimulated the need for a son (Yang, 2005). As a result, the traditional lower status of women determines the economic dependence on men in the family. Couples may have attempted to have sons through more births before there was a strict birth control policy. With the implementation of strict birth control policies and wide availability of prenatal sex determination technology since the early 1980s, sex-selective abortion is an important mechanism for a family to realize their preference for a son (Banister, 2004; Qiao, 2004; Wei et al, 2005). But the continuous rise in SRB and EFCM are fundamentally caused by son preference; the restrictive birth control policy of China has only intensified and made the preference easier to realize. If son preference were weak, the rapid fertility decline would not necessarily lead to an abnormally high SRB and EFCM (Poston et al., 1997).

In brief, sex-selective abortion, neglect of girls, and female infanticide are the main reasons for the rise in SRB and EFCM (Zeng et al., 1993; Gu and Roy, 1995; Tu and Smith, 1995; Chu, 2001; Li et al, 2004). Behind these is the traditional childbearing culture plus son preference (Li et al, 2004), current economic system and public policy are the conditional factors.

DEMOGRAPHIC AND SOCIAL IMPLICATIONS

Demographic Implications

The relative high SRB and EFCM lead directly to the phenomenon of missing girls and gender imbalance, and further affect such population issues as population size, aging, employment, and marriage squeeze.

Missing girls caused by high SRB and EFCM will also decrease the population size. It will also diminish the potential of production in the following cycle. Under the

same levels of fertility and mortality, the decreasing population influenced by missing girls will definitely affect the process of aging, which will lead to decreased general population size and a decrease in the working age population. Missing girls caused by gender discrimination will lead to an imbalance in the sex ratio, and a shortage of marriageable females and a 'marriage squeeze' for males (Tuljapurkar et al., 1995; Das Gupta and Li, 1999).

Social Implications

High SRB and EFCM will also have social implications. The main one is its harm to the quality of life; it will hurt the girl child's rights of survival, participation in society, and economic development; it will hinder productivity, efficiency, and economic progress, hurt the general welfare of the society, and hamper sustainable development of Chinese society. Firstly, it is the most basic of human rights to enjoy right to birth and to life. High SRB and EFCM have deprived the birth right of female infants and children with the female fetus and infants suffering directly (Ma, 2004). Secondly, females suffer the tremendous psychological pressure and health risks of sex-selected abortions, which affects both their physical and reproductive health (Zhu et al., 1997; Li et al., 2004). Finally, the unbalanced Chinese gender structure caused by "missing girls" will result not only in marriage pressure on young males, but also a series of social problems, such as inferior physical and psychological health of the unmarried, instability of marriages and families, birth out of wedlock, problems of old age support for those who never married, increasing prostitution, and abduction of and trafficking in women. These and related social problems will impair the welfare of the overall society and harm the long-term sustainable development of Chinese population and society (Lu and Fu, 2004; Song et al., 2005).

INTERNATIONAL PERSPECTIVE AND EXPERIENCE

High SRB and EFCM are not confined to China, but also exist in other countries, although the extent and determinative factors may differ. International society should also undertake corresponding measures for the solution of these questions, and positively improves the girls' survival environment as well as women's status.

Current Situation and Reasons in Other Countries with Similar Issue

Asian countries (especially in eastern Asian and southern Asian countries) are the main area that female discrimination prevails; sex ratio of Asian population is very high, 104.5 in 2000. Some scholars estimated the number of female shortage to be 60 to 100 million in this area (Croll, 2001). SRB increased rapidly with the fertility decline in India, South Korea and Taiwan.

The census data in 2001 in India showed that SRB² declined stably. SRB was 898 in 1998-2000, and for most states it was lower than the normal value of 952 during this period. The sex ratio of children (aged 0-6) declined from 945 in 1991 to 927 in 2001. Female infant and child mortality were much higher than that of males in 1994-2000 (Choudhury, 2005). SRB in Korea not only is high as a whole but increases with parity (Park and Cho, 1995). SRB in Korea has declined gradually from 113.2 in 1995, to 110.2 in 2000 and 110.0 in 2002, but is still higher than normal (Shi, 2004). A similar situation has been observed in Taiwan, where fertility declined from 4 in 1970 to 1.4 in 2001 and the sex ratio of children aged below 4 was around 109-110 (Attané, 2005).

The reasons for inferiority of girls' survival environment in other Asian countries are basically same as in China. The immediate cause is sex-selective abortion and discrimination against girls (Das Gupta and Li, 1999; Croll, 2001), while son preference in these counties and regions is the underlying reason for high SRB and EFCM.

Efforts of International Society

In order to change the disadvantaged condition of females, the UN published its *Convention on the Elimination of All forms of Discrimination against Women*, and enjoined its member countries to eliminate all forms of discrimination against women. In 1995, the Fourth World Women's Congress passed the *Declaration of Beijing*, and *Action Plan*, which have become major principles for promoting gender equality internationally.

With respect to the relative high SRB, each country has devoted much effort to it. South Korea, India and Tai Wan all forbid sex determination in any form (Shi, 2004). In 1980 the South Korean government published a series of laws aimed at improving the rights of children and women, anti-gender discrimination, and women's status. In addition, the government promoted a social environment which pays special attention to girls children and females (Shi, 2004). Because of the decreasing number of girls, the Indian government produced a new family planning policy that encourages giving birth to female infants, and also introduced comprehensive methods to change the social attitudes toward girl children (Tian and Gao, 2004).

Taiwan, which shares with mainland China the same Confucian culture that values males more than females, punishes seriously hospitals which practice sex selection. It has also stipulated that female children before marriage have the right to inherit the family property, and provides through public departments welfare for the aged. Also the government provides security for the elderly, and these polices have led to reduction in the SRB since 2001 (CNP, 2004).

² In India, SRB is calculated as the ratio of female births to male births, the normal value being around 950.

CHINA'S ACTIONS AND PROSPECTS

Laws and Regulations

The Chinese government pays special attention to women's legal rights and interests, and emphasizes the economic development of women and children. This is reflected in national laws and regulations of the State Council concerning women's economic and political status, namely the right to receive education, to inherit family property, laws concerning marriage and old-age support, etc. Laws such as *Stipulation of Labor of Woman Staff* implemented in 1988, and *Law Safeguarding Women's Rights and Interests* in 1992, aim to protect women's rights and interests, to promote gender equality, and to protect women's economic status. Political rights is another important area of women's social status, and the *Constitution* in China has ensured both women and men have equal rights in selecting, to be selected, to participate in national affairs, and to work as civil servants. The *Compulsory Education Law* in 1986 stipulates that all boys and girls of all nationalities and regions have the right to receive 9 years of compulsory education. The *Law of Succession* of 1985 stipulates that boys and girls share the same rights of succession. The *Marriage Law* of 1950 and 1981 also protects the legal rights and interests of women and children. The Chinese government has also adopted a series of active policies in response to the rise in SRB under current low fertility, for example, the *Law on Maternal and Infant Health Care* in 1994, *Managing Stipulations on Family Planning Technical Services* in 2001, *Law of Population and Family Planning* in 2002, *Stipulation on Forbidding Non-medical Aimed Fetus Sex Determination and Sex-selective Abortion* implemented in 2003. It is clearly stipulated that all organizations and individuals are forbidden to perform non-medical sex determination or sex-selected abortion.

The Chinese government not only has enacted laws and statutes to promote the equal legal environment for men and women, but has also participated actively in international women's rights activities; in 1980 it signed the *Convention on the Elimination of All Forms of Discrimination against Women*, the *Nairobi Strategy* in 1985, the *Equal Remuneration for Men and Women Workers for Work of Equal Value* etc. in 1990.

Intervention Activities

In attempting to solve the problem of high SRB and EFCM in China, many national intervention projects were developed with the support of government, participation of research institutions as well as cooperation with grass roots and international organizations. These activities aim to gradually reduce son preference, to establish a favorable survival environment of public opinion for girls, improve women's status, to change norms and preferences, and to realize gender equality through publicity and economic assistance to families with girls. These intervention

activities have drawn international attention and improved the image of Chinese government as one that is actively caring for girls' development (Zhu and Li, 2000).

Some research institutes have collaborated with the government to carry out studies with support from international organizations. For instance, Xi'an Jiaotong University has proposed policies and a framework for the intervention through systematic cultural change to improve the survival environment of girls. This was based on studies of EFCM in cooperation with the family planning infrastructure (Zhu et al., 1997; Li and Zhu, 2001, Li et al., 2004) and was first used in the program "New Culture of Marriage and Childbearing Entering into Thousand Families", carried out by the NPFPC in 39 counties from 1998 -2000, with positive results. With financial support from Ford Foundation and UNICEF, and support from the NPFPC and the Anhui Provincial Population and Family Planning Commission, Xi'an Jiaotong University and Chaohu government established "Chaohu Experimental Zone for Improving the Girl Child Survival Environment" in 2000-2003. This aims to establish a favorable survival environment for girls in Chaohu by the use of direct as well as indirect intervention measures with the aid of various reproductive health training and social development activities. It is hoped that what is learned here can be used to develop intervention measures and implementation strategies for improving girls' survival environment in rural China. Experiences in Chaohu would be extended to the whole county through training programs and social development projects at various levels. The results of these studies and community intervention projects on improving the survival environments of girls could be communicated to the broader international society. Within three years, the main objectives of the experimental zone have been achieved.

Improvements in women's status and the survival environment of girls as well as protecting girls' basic rights have also been the goals of the NPFPC's experimental project "Caring for Girls" begun in 2003 in 11 counties (city) with high SRBs in 11 provinces to launch the "New Culture of Marriage and Childbearing Entering into Thousand Families". This program reduces rate of increase in the SRB, The project aims to change the traditional idea of "value men more than women" with the ultimate development goal of gender equality in the whole society (Pan, 2003). At present, the "Caring for Girls" program of improving the survival environment of girls is being expanded to hundreds of counties across the nation and is a key component of the Chinese government's long-term population development strategy.

Prospects for the Future

The Chinese government has made it a high priority to address the problems of rising SRB, and implementation of the "Caring for girls" project is a further step to control the rising SRB (Wei, 2005). Decreasing SRB and protecting girl children is an important part of population policy for 2005 with the general goal of restoring the SRB to a normal level before 2010.

As part of this goal, the government has promoted uxori-local marriage in some rural areas as a means of decreasing son preference (Yan et al., 1999). With the demographic and economic transition in China, this is a propitious time to enhance the activities of “New Culture of Marriage and Childbearing Entering into Thousand Family”, “Caring for Girls”, and other kinds of interventions that aim to gradually decrease son preference, and change the traditional culture of “value man more than women” (Jin et al., 2004). However, changing the system and the culture takes a long time, and it is government’s responsibility to address the economic and political issues involved. Some regions have already introduced elderly support systems, centered on social support, family support, or self-support, as well as multi-level rural social support systems (Sun et al., 2003; Yang, 2005). At the same time, policies and regulations were developed to help women enjoy equal rights and opportunities in resource sharing and work opportunities and to eliminate gender discrimination. Considering the fact that son preference has been exacerbated by the family planning policy, the government is currently considering the feasibility of less restrictive birth control policies (Zhou, 2005). The government has also adopted a series of active policies; some regions have set targets for reducing SRB, including plans to evaluate county- and city-level population and family planning staff, to step up control and management of ultrasound machines and more stringent ratification procedures for terminating pregnancy. These measures have led to a decline of SRB in the regions where they were implemented (Liu, 2003; Huang and Zhou, 2005).

International experience and Chinese practices show that it is possible to improve the survival environment of girl children and thus to alleviate EFCM. It is feasible to produce a favorable environment for female children, to continue social and economic development and to establish an improved social security system. Nevertheless it will take a long time for the culture to change to the degree that at the national level the goal of gender equality for children and adults is achieved.

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Table 1 Sex Ratio of Child Mortality and Excess Female Child Mortality Indexes, Urban and Rural Areas, Selected Census Years

Year	Region	SR_0	I_0	SR_1	I_1
1981	City	1.11	0.130	0.93	0.250
	Town	1.07	0.161	0.96	0.221
	County	1.05	0.173	0.90	0.257
1990	City	0.94	0.292	0.85	0.368
	Town	0.85	0.404	0.95	0.237
	County	0.87	0.375	0.79	0.423
2000	City	0.91	0.335	0.94	0.233
	Town	0.82	0.452	0.98	0.177
	County	0.79	0.482	0.90	0.255

Source: For 2000, calculation based on Li et al. (2005a); for 1981 and 1990, Li and Zhu (2001).

Appendix: In Figure 4, 6, 7 and 10, the abbreviations for provinces are:

BJ: Beijing	LN: Liaoning	SH: Shanghai	HN: Henan	SC: Sichuan	SA: Shaanxi
TJ: Tianjin	JL: Jilin	JS: Jiangsu	UB: Hubei	CQ: Chongqing	GS: Gansu
HB: Hebei	HL: Heilongjiang	ZJ: Zhejiang	UN: Hunan	GZ: Guizhou	QH: Qinghai
SX: Shanxi		AH: Anhui	GD: Guangdong	YN: Yunnan	NX: Ningxia
NM: Inner Mongolia		FJ: Fujian	GX: Guangxi	XZ: Tibet	XJ: Xinjiang
		JX: Jiangxi	HA: Hainan		
		SD: Shandong	TW: Taiwan		

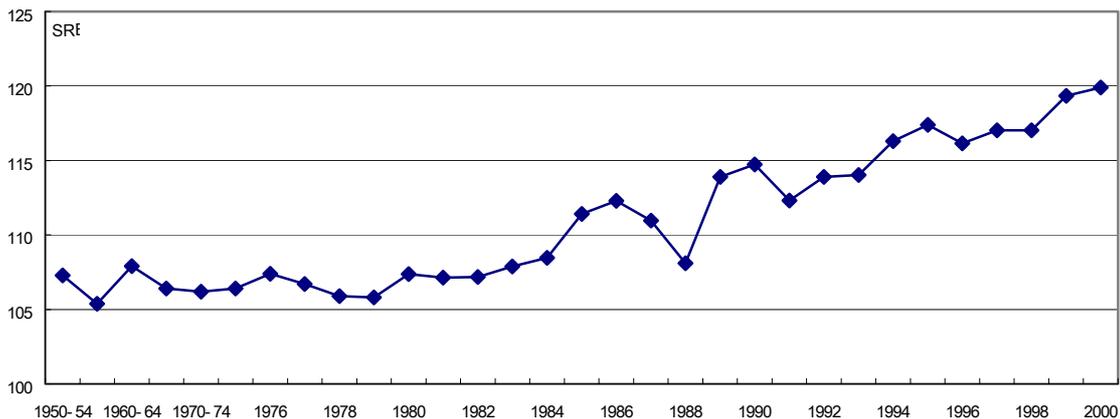


Figure 1 SRB in 1950-2000 in China

Source: From 1950-1959 and for 1988, SFPC (1990); from 1960-1979, Gu and Xu (1994); from 1980-1987, China Population Statistics Yearbook 1991; for 1989, Reference of Population Census in 1990; from 1990-1999, China Population Statistics Yearbook of past years; for 2000, Tabulation on 2000 Population Census.

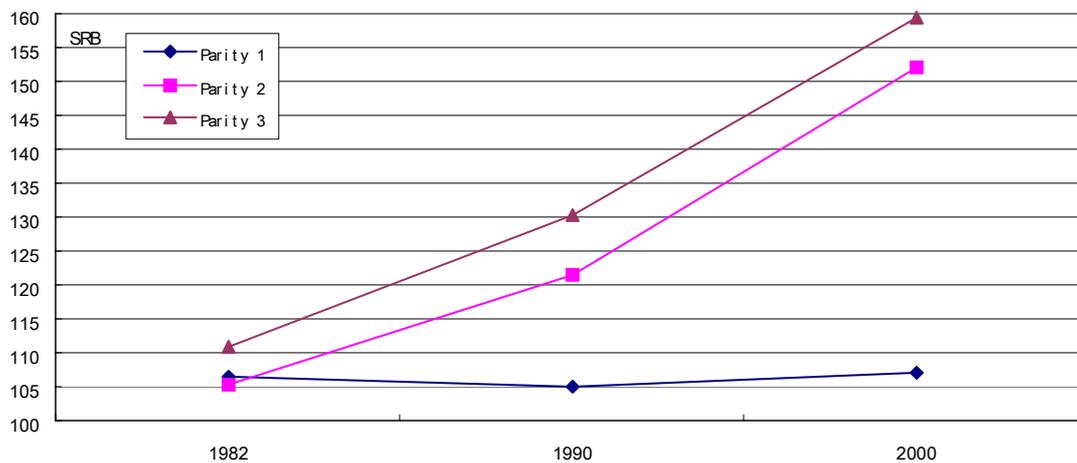


Figure 2 SRB by Parity in Selected Census Years

Source: Tabulation on the population census in 1982, 1990 and 2000.

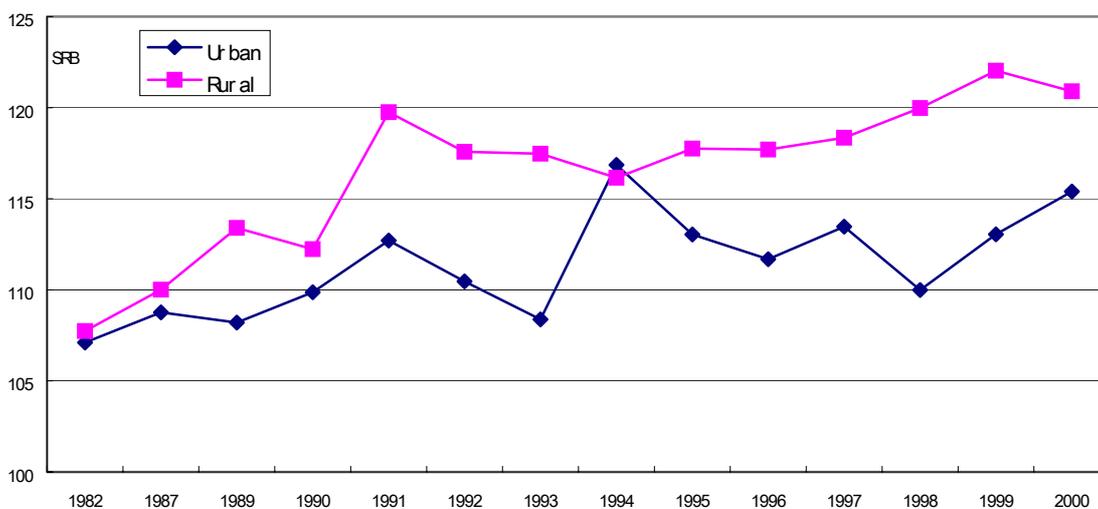


Figure 3 SRB in 1982-2000, Urban and Rural Areas

Source: China Population Statistics Yearbook of past years.

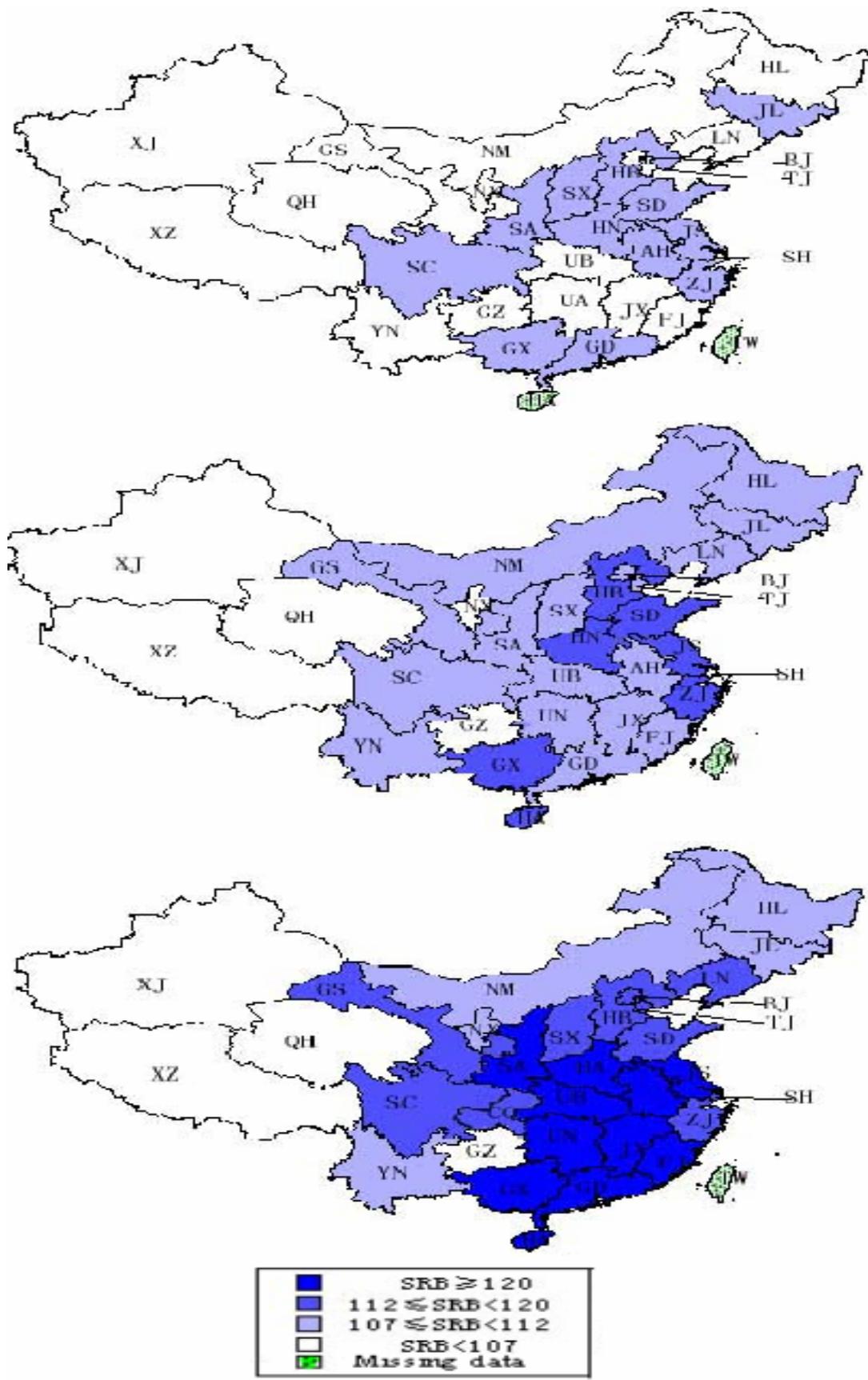


Figure 4 SRB by Province in 1982, 1990 and 2000

Source: Tabulation on the population census in 1982, 1990 and 2000.

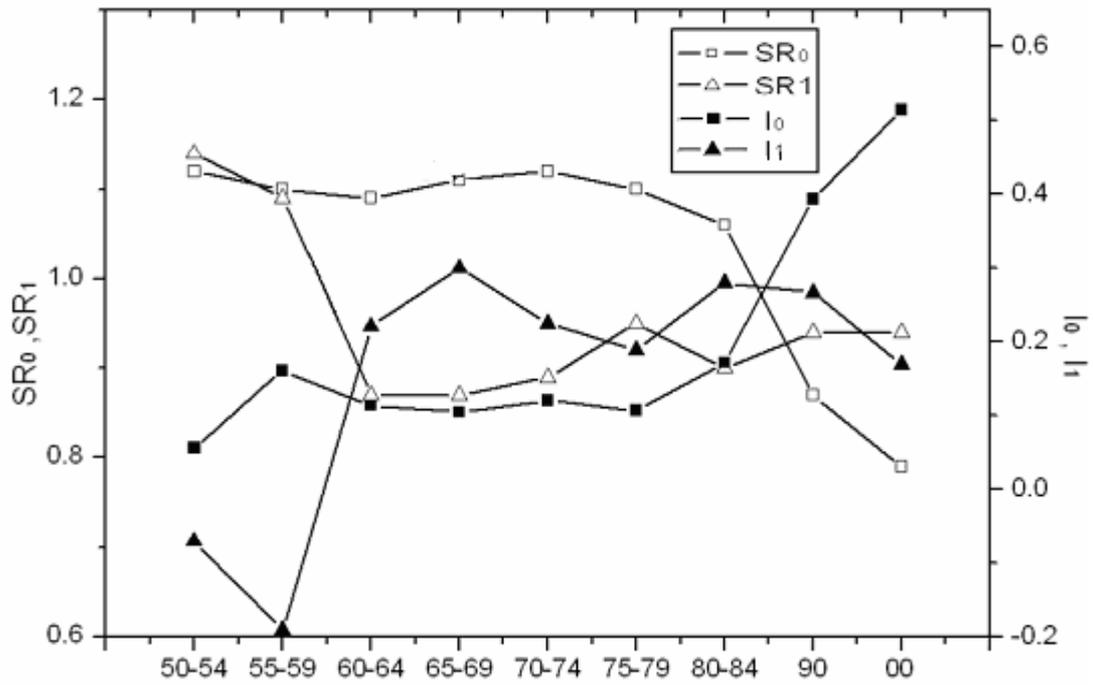


Figure 5 Sex Ratio of Child Mortality and EFCM Indexes in 1950-2000, China

Source: For 2000, calculation based on Li et al. (2005a); for 1981 and 1990, Li and Zhu (2001).

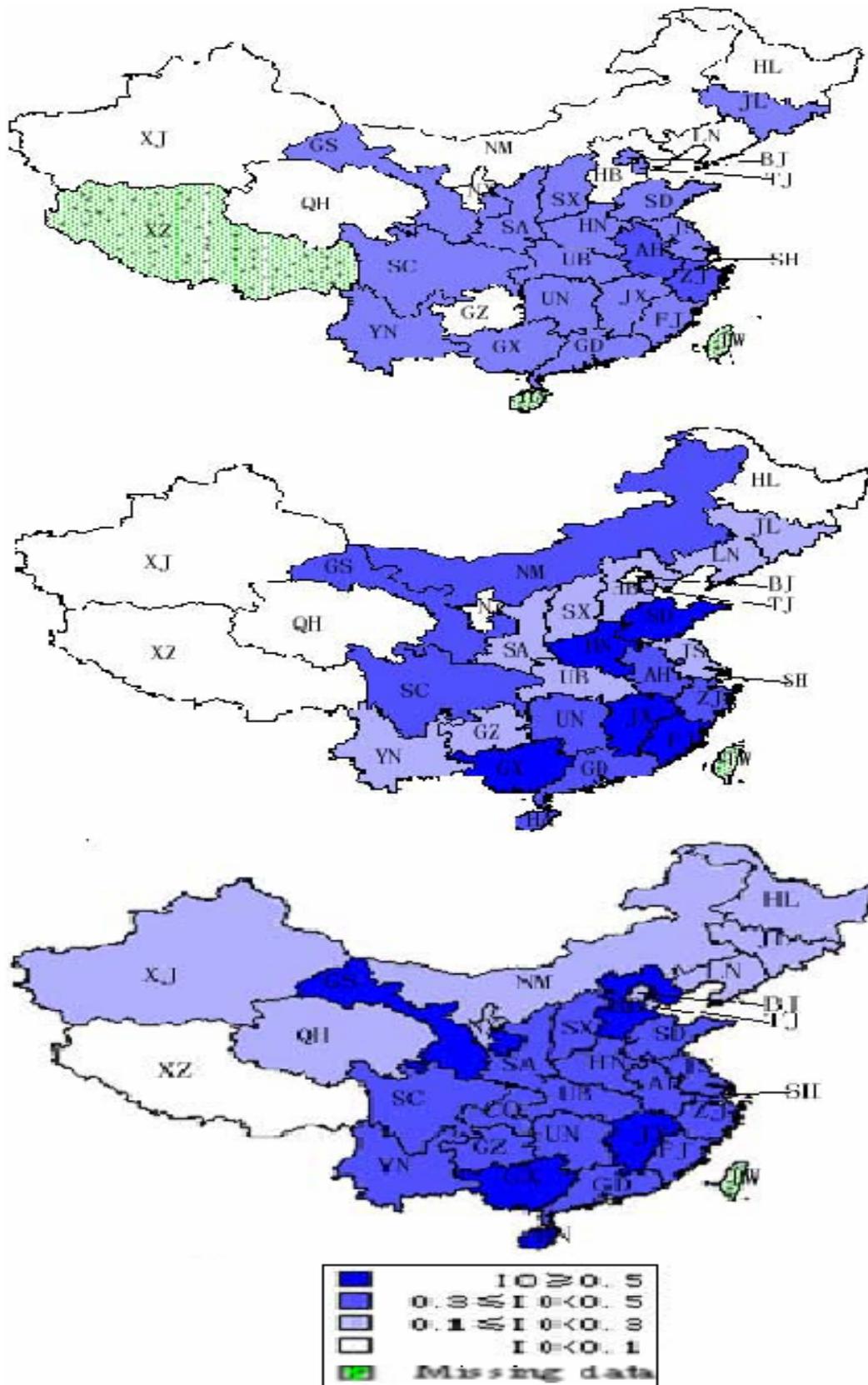


Figure 6 Excess Female Infant Mortality Indexes by Province in 1981, 1990 and 2000, China
 Source: For 2000, calculation based on Li et al. (2005a); for 1981 and 1990, Li and Zhu (2001).

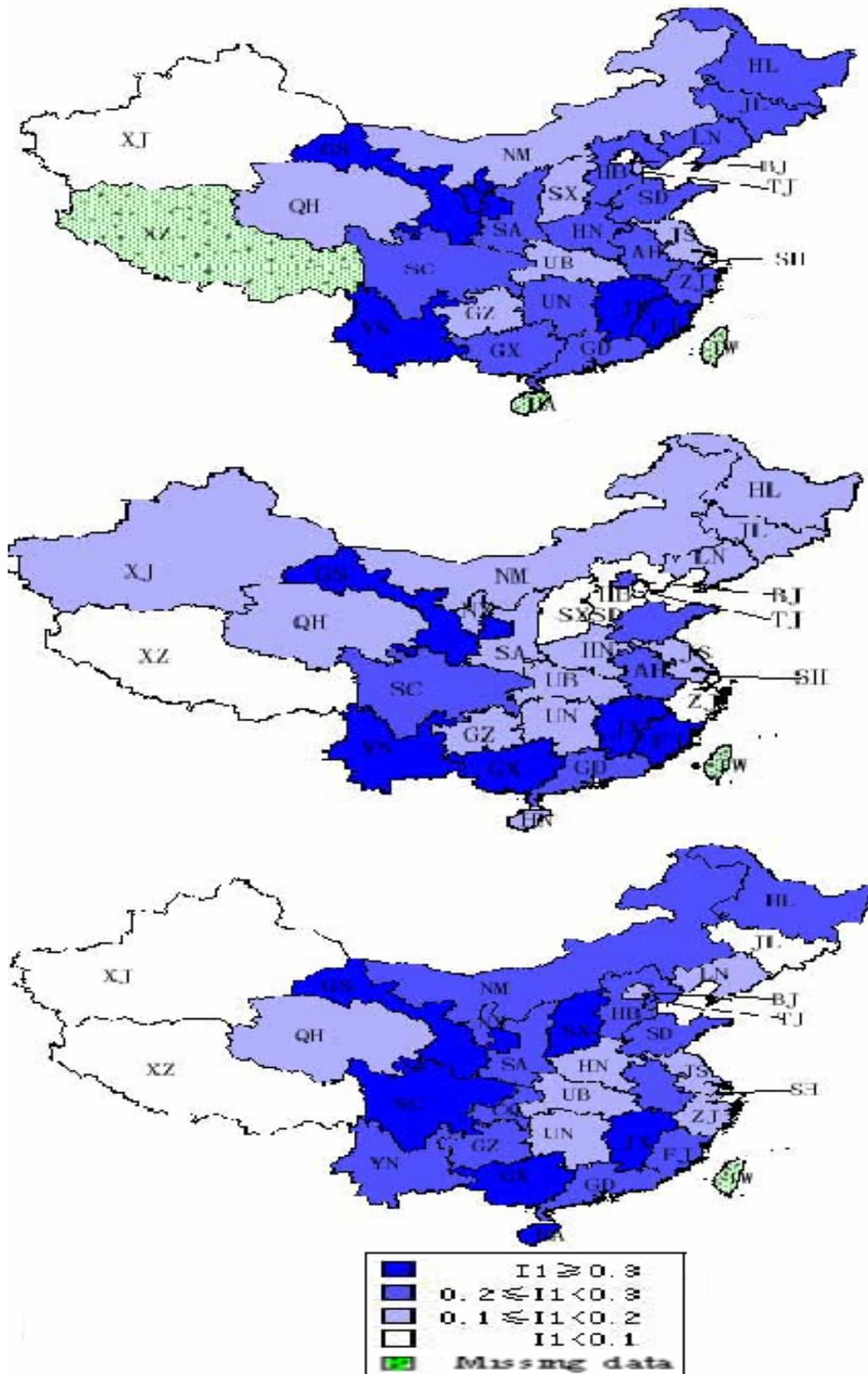


Figure 7 Excess Female Child Mortality Indexes by Province in 1981, 1990 and 2000, China
 Source: Same as figure 6

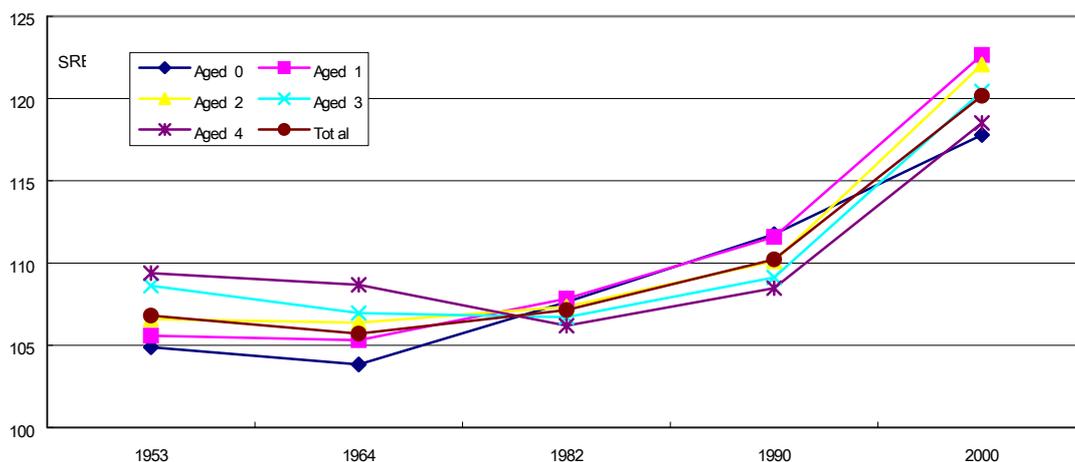


Figure 8 Sex Ratio of Population aged 0-4 in Census Years

Source: Tabulation on the population census in 1953, 1964, 1982, 1990 and 2000.

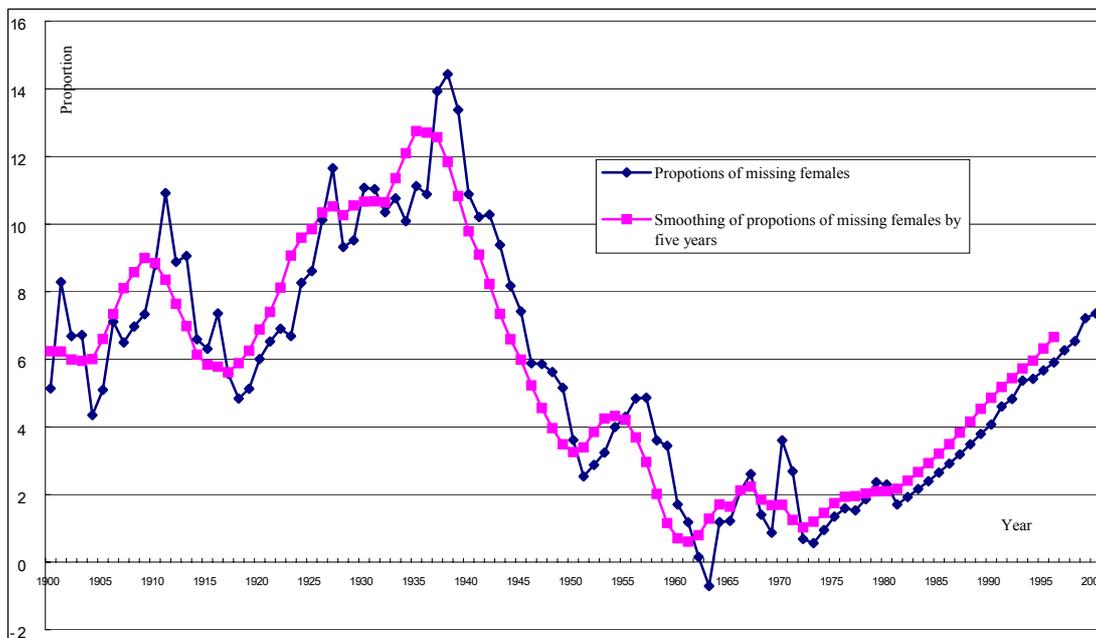


Figure 9 Percentages of missing females during 1900-2000

Source: Jiang et al. (2005).

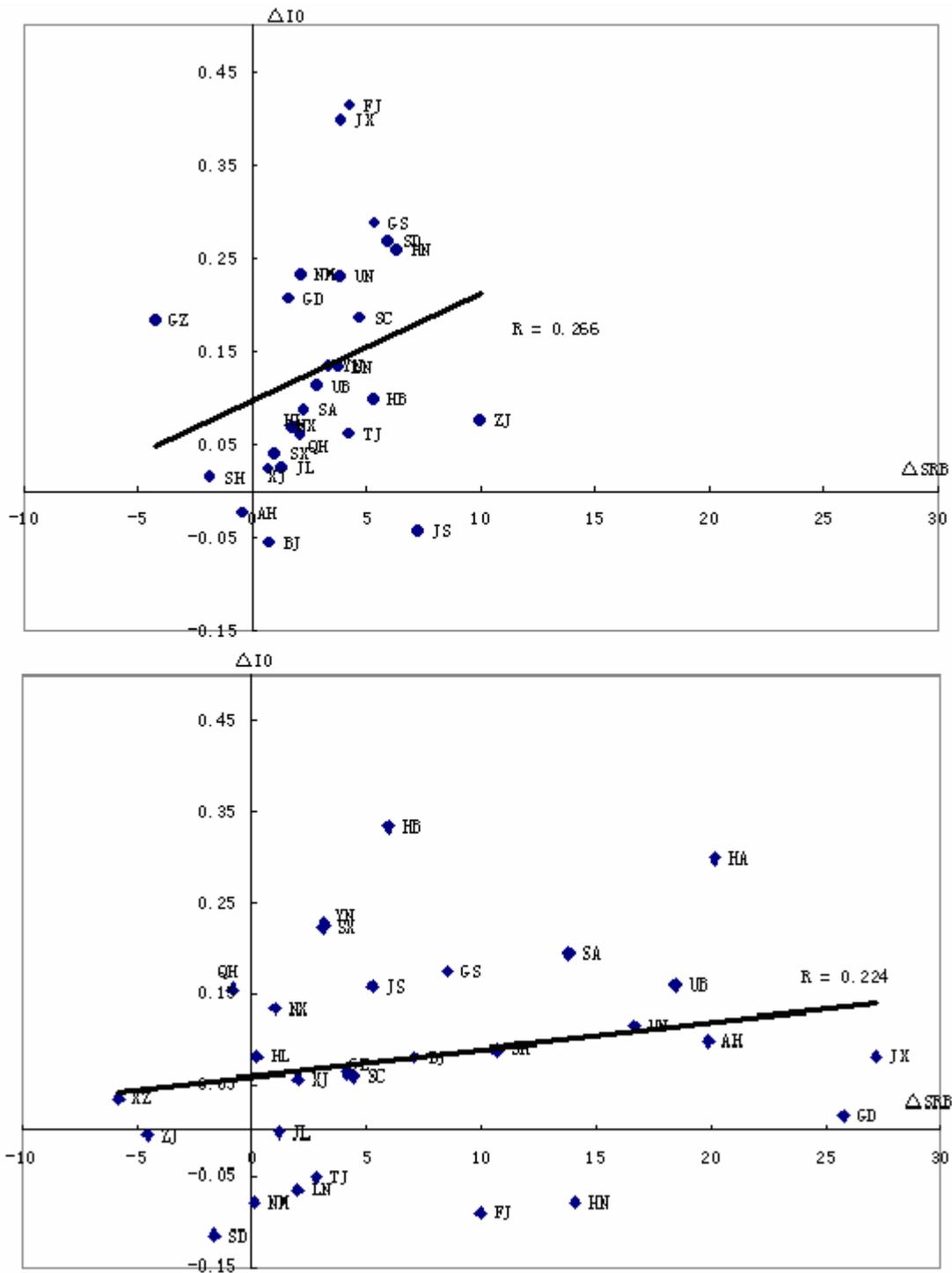


Figure 10 Dynamics of SRB and Excess Female Infant Mortality Indexes during 1981, 1990 and 2000
 Source: Calculation based on Figure 4 and Figure 6. For Guangxi, the variations are out of the range of this figure, in the upright corner.