Chapter 5
Life-Long Inequality

5.1 The Percentage of Men in the Adult Population

The masculinization of China's population is largely a "bottom-up" process in the sense that first it affects births (through increasing use of prenatal sex selection) and then children (as a consequence of excess female infant and child mortality) and then continues into adulthood as cohorts grow older (Chu 2001; Mo 2005). However, the sex distribution in adulthood can be also influenced by other factors. When there is no sex-differentiated migration, the sex ratio can be rebalanced by improvements in women's survival, particularly at reproductive ages; by gains in female life expectancy at birth; or by worsening living conditions for men, in particular at working ages, owing to high-risk occupational and social behaviours which expose them to excess mortality. Conversely, the masculinization process can accelerate in adulthood due to insufficient gains or worsening living standards for women, leading to relative excess mortality.

The percentage of adult men in China's population increased in various age groups between 1953 and 2000 (Fig. 5.1). The only exceptions were the youngest group (aged 15–19 in 2000) and the 30–39 age group. In those two age groups, which exhibited high sex ratios in 1953, there has been some sex rebalancing, whereas all other age groups now show an even higher over-representation of men than in 1953.[1] Masculinization is particularly pronounced in the oldest age groups (over 50), which contrasts with the trends usually observed in the context of an ageing population.

[1] I am unable to provide satisfactory explanations for the trend observed in these two age groups. It might come from a "smoothing" effect in the recent period, compared with the period prior to 1953, which was more chaotic politically and socially and therefore more likely to be characterized by variations in the sex ratio in some age groups.

I. Attané, *The Demographic Masculinization of China: Hoping for a Son*,
INED Population Studies 1, DOI 10.1007/978-3-319-00236-1_5,

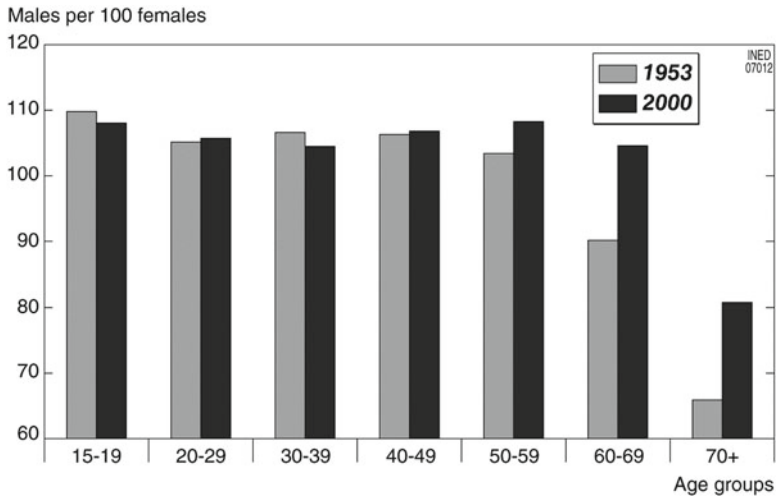

Fig. 5.1 Sex ratios at adult ages in different age groups, China, 1953 and 2000 (Sources: relevant surveys and censuses (NBS 1988; PCO 2002))

5.2 A Mortality Regime Skewed Against Women

The growing prevalence of prenatal sex selection is an undeniable factor in the masculinization of China's population. This new manifestation of the traditional preference for sons, made possible by increasingly widespread access to methods for determining the sex of an unborn child, reinforces age-old practices of neglect towards girls that contribute to their excess mortality and therefore to a deficit of females relative to males (Das Gupta and Li 1999; Li and Zhu 2001).

Excess female infant and child mortality undeniably contribute to the masculinization of the child population and to the persistence of relatively small gender gaps in life expectancy at birth. The female deficit could also be accentuated by excess female mortality that persists at older ages. Excess female mortality after age 5 is harder to measure accurately than mortality at young ages, however. Whereas male and female infant and child mortality rates are mainly influenced by biological factors (Hill and Upchurch 1995), at older ages they are determined by genetic factors and, to a large extent, by sex-specific behavioural factors (Clarke 2000; Vallin 2002). Most populations therefore exhibit excess male mortality in adulthood owing to biological factors, but above all to men's greater propensity to engage in risk behaviours.

The data shown below, drawn from empirical observations, indicate that although no population can be considered completely free of sex-specific behaviour that could affect mortality rates, the trends observed in different countries are fairly similar. At an equivalent male life expectancy at birth, the female-to-male ratios of the age-specific probabilities of dying fall within a fairly narrow range and the dispersion is small (Figs. 5.2a, b, c, d). This appears to confirm the observation that there are no pronounced differences between countries in the sex ratio of deaths at each age (Clarke 2000).

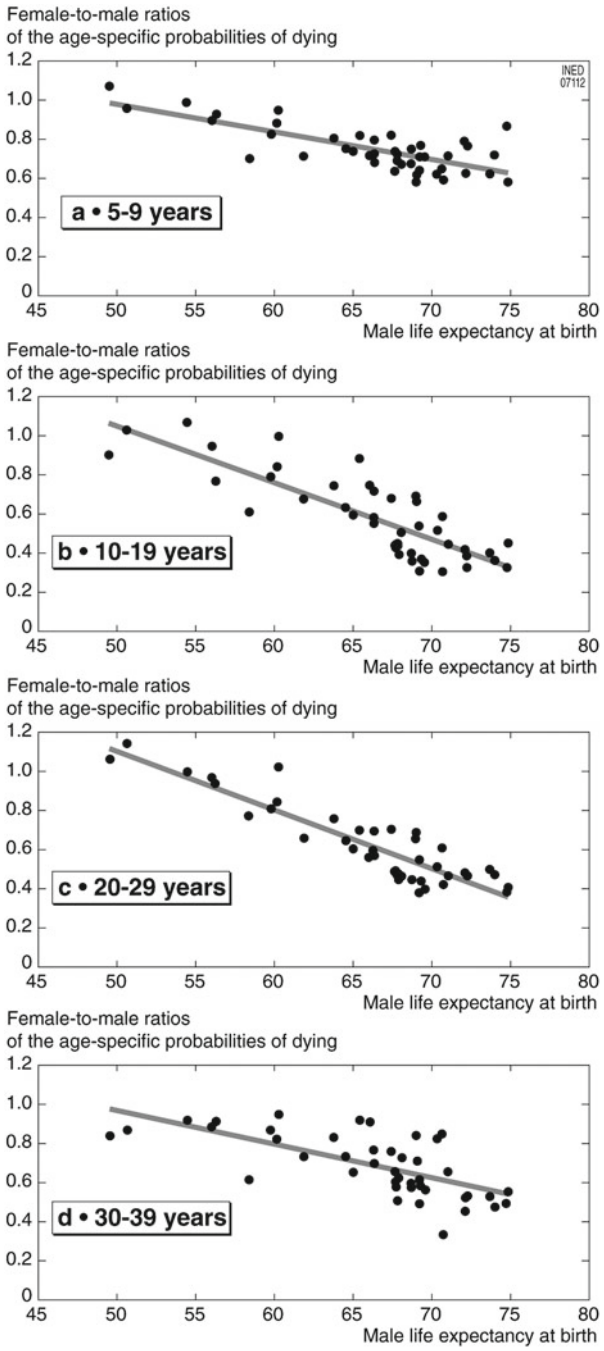

Fig. 5.2 Correlation between the female-to-male ratio of the age-specific probabilities of dying and male life expectancy at birth, in 43 countries at various dates (Sources: see Appendix 5.3, pp. 73–74)

Figures 5.2a, b, c, d are based on empirical data for 20 countries in Europe, America, Asia and the Pacific at various dates in the twentieth century. Forty-four life tables for Switzerland, Belgium, France, Norway, Sweden, Finland, Denmark, Austria, the Netherlands, Germany, England and Wales, Ireland, Greece, Australia, New Zealand, Canada, Japan, Taiwan and Republic of Korea were selected because they are considered to be of fairly good quality, are available for various years in the century and offer a broad range of mortality levels (see Appendix 5.3 at the end of this chapter for the detailed data).[2]

These graphs show the strong correlation between male life expectancy at birth and the female-to-male ratio of the age-specific probability of dying in the various age groups, and that in China the bulk of female excess mortality is observed after age 5, in the 5–9, 10–19, 20–29 and 30–39 age groups (Fig. 5.2a, b, c, d). Despite some dispersion, the relationship is clear: as male life expectancy increases, the female-to-male ratio of the age-specific probability of dying in the various age groups diminishes, which means that the gender gap widens in favour of women (with coefficients of determination R^2=0.565, 0.821, 0.688 and 0.454 and corresponding correlation coefficients r=0.751, r=0.906, r=0.829 and r=0.674 respectively in those four age groups).

That finding supports the hypothesis that the difference between the female and male probabilities of dying at each age after five is not completely random but results from sex-specific genetic factors and socio-cultural behaviours that, to a certain extent, are common to all populations, at a given male life expectancy at birth.

On the basis of these empirical observations and taking inspiration from the methodology used by Hill and Upchurch (1995) to determine the "expected" gender gap in the age-specific probabilities of dying in infancy or childhood, we have attempted to determine the "likely" expected gender gap in the age-specific probabilities of dying after age 5. The methodology is also based on the idea that, as Clarke (2000) indicates, sex differences in mortality are relatively homogeneous across continents and cultures at every age at a given mortality level but that China does not fit this general observation.

A comparison of the situation in different countries, excluding China (Fig. 5.3a, b, c), reveals that, at an equivalent male life expectancy at birth, the female-to-male ratio of the age-specific probabilities of dying at given ages is fairly constant, even if there are undeniable differences in levels. Overall, it is before age 5 and at reproductive ages that the female-to-male ratios are the highest and the gender gap in mortality is the smallest.

By contrast, it is in early adulthood (15–25) and roughly between ages 55 and 65 that women have the strongest mortality advantage. This relatively homogeneous pattern shows that the gender gap in the countries in the sample falls within a

[2]The life tables for these countries, except Japan, are taken from the Human Life-Table Database, developed by the Max Planck Institute for Demographic Research, Rostock, Germany, by the Department of Demography at the University of California, Berkeley, USA, and by INED, Paris, France. They are available at: http://www.lifetable.de/cgi-bin/datamap.plx. The life tables for Japan are taken from the Abridged Life Tables, Institute of Population Problems, Ministry of Health and Welfare, Research Series, for the corresponding years.

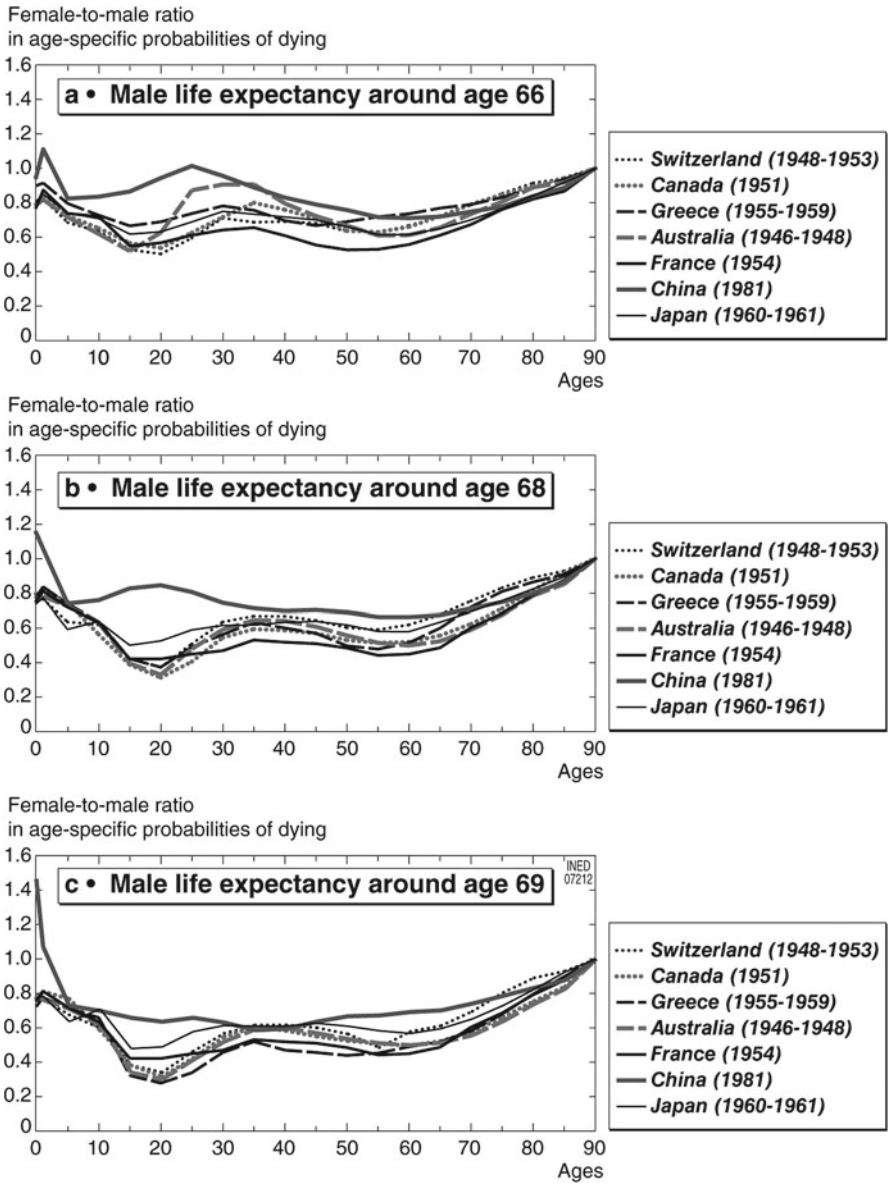

Fig. 5.3 Female-to-male ratio of the age-specific probabilities of dying in China and other countries (Source: for China: CPIRC (1995) and Banister (2007); for the other countries: see Appendix 5.3, pp. 73–74.)

relatively narrow range of values, at a given male life expectancy at birth. China does not follow the same pattern, however. Compared with the cases presented here, China exhibits excess female mortality in early childhood (0–4 years), in early adulthood – probably partly due to still relatively high maternal mortality at those

Table 5.1 Leading causes of death from external causes by sex and place of residence, China, 1995–1999

	Cause of death	Rank	Mortality rate (per 100,000 population)	% of total deaths in 15–84 age group
Rural areas				
Women	Suicide and self-inflicted injuries	4/15	30.47	4.92
	Road accidents	13/15	11.04	1.78
Men	Suicide and self-inflicted injuries	8/15	23.87	3.29
	Road accidents	6/15	26.50	3.66
Urban areas				
Women	Suicide and self-inflicted injuries	12/15	8.31	1.71
	Road accidents	10/15	8.40	1.73
Men	Suicide and self-inflicted injuries	14/15	8.27	1.33
	Road accidents	7/15	21.00	3.37

Source: Phillips et al. (2002)

ages (see Appendix 5.1)[3] – and, more recently, at ages 50–65. Although these results should be interpreted with caution, – until the 1990s, adult Chinese men behaved in ways more conducive to their survival at ages at which men in other countries were more likely to engage in risk behaviour (Banister 2007) –, the relative excess mortality of Chinese women cannot be ignored. In practice, as noted by Phillips et al. (2002), violent death by suicide and self-inflicted injuries is the leading cause of death among Chinese women aged 15–34, in particular rural women, for whom this cause accounts for 31 % of deaths in this age group, compared with 15.8 % for urban women (compared with 13.1 % for rural men and 7.4 % for urban men in the same age group) (Table 5.1). China is indeed one of the few countries in the world where women commit suicide more frequently than men (approximately 600 women committed suicide per day at the end of the 1990s, according to the World Health Organization), with mortality rates ranging from 40 to 140 per 100,000 among women aged 55 and over, a level four to five times higher than men in the same age group (Phillips et al. 2002). Chinese women commit more than half (56 %) of all female suicides in the world. These suicides are impulsive acts but the women who commit them show no sign of mental illness or depression and are not under the influence of alcohol[4] (Attané 2005) (see Appendix 5.2). Suicide is now the

[3] Although maternal mortality is still not measured accurately in China, this argument is supported by the relatively high percentage of women who give birth at home, estimated to be 23 % in 2000 (WMC 2004).

[4] These factors are commonly associated with suicide in the West.

Table 5.2 Standardized female-to-male ratios of the age-specific probabilities of dying in various age groups[a]

Male life expectancy at birth e_0	Female-to-male ratio of the age-specific probabilities of dying			
	$_5q_5$	$_{10}q_{10}$	$_{10}q_{20}$	$_{10}q_{30}$
50	0.974	1.077	1.002	0.913
51	0.960	1.049	0.975	0.898
52	0.947	1.020	0.949	0.883
53	0.933	0.992	0.922	0.868
54	0.920	0.964	0.895	0.853
55	0.906	0.936	0.869	0.838
56	0.893	0.908	0.842	0.822
57	0.879	0.879	0.815	0.807
58	0.866	0.851	0.788	0.792
59	0.852	0.823	0.762	0.777
60	0.839	0.795	0.735	0.762
61	0.825	0.767	0.708	0.747
62	0.812	0.738	0.682	0.732
63	0.798	0.710	0.655	0.717
64	0.785	0.682	0.628	0.702
65	0.771	0.654	0.602	0.687
66	0.758	0.626	0.575	0.671
67	0.744	0.597	0.548	0.656
68	0.731	0.569	0.521	0.641
69	0.717	0.541	0.495	0.626
70	0.704	0.513	0.468	0.611
71	0.690	0.485	0.441	0.596
72	0.677	0.456	0.415	0.581
73	0.663	0.428	0.388	0.566
74	0.650	0.400	0.361	0.551
75	0.636	0.372	0.335	0.536
Relevant algebraic formula	$y = -0.0135\times + 1.6485$	$y = -0.0282\times + 2.4867$	$y = -0.0267\times + 2.337$	$y = -0.0151\times + 1.668$

Source: Author's calculations

[a]Obtained from data collected for various European, Asian, American and Pacific countries in the twentieth century

See Appendix 5.3 at the end of this chapter for the detailed data

leading cause of death among Chinese women aged 15–34. Among rural women, there are seven times more deaths due to suicide than to medical complications of pregnancy[5] (Phillips et al. 2002).

By applying the algebraic formula describing the correlation between male life expectancy at birth and the female-to-male ratio of the age-specific probabilities of dying in each of the age groups considered, we estimated a standardized value for the female-to-male ratio of the age-specific probabilities of dying at a given male life expectancy at birth (Table 5.2).

[5]Estimated data for 1998.

Thus, for a male life expectancy at birth of 70, for example, the corresponding value for the female-to-male ratio of the age-specific probabilities of dying is 0.704 at ages 5–9, 0.513 at ages 10–19, 0.468 at ages 20–29, and 0.611 at ages 30–39. In China, the female-to-male ratio of the age-specific probabilities of dying in the 10–19 age group was 0.802 in 1990, when male life expectancy was 68.4 according to the CPIRC (1995), whereas it should have been around 0.569 according to the standardized values. That indicates excess female mortality of around 40 % in that age group. In 2000, when male life expectancy in China was 69.3 years, the female-to-male ratio of the age-specific probabilities of dying in the 10–19 age group was 0.671 whereas it should have been around 0.541, which means that excess female mortality in this age group still exceeds 24 %.

In order to estimate *relative* excess female mortality in China, the female-to-male ratios of the probabilities of dying[6] in various age groups were calculated and then compared with standardized values at a given male life expectancy at birth. For that purpose, the standardized ratios were considered to reflect a situation where mortality conditions in the countries concerned were largely unaffected by discrimination against women and where the genetic and behavioural characteristics of each sex were common to all countries, and which reflected the low level of heterogeneity between the countries considered here, with the exception of China.

It emerges that, at an equivalent male life expectancy at birth, the female-to-male ratios of the probabilities of dying in the age groups considered is generally higher in China than the standardized ratios. That finding suggests either that women's living conditions are generally less favourable to their survival, or that men's living standards are generally more favourable to their survival than in other countries. Either way, the gender gaps in mortality, which are smaller in China than the standardized gaps, highlight excess female mortality relative to males, which indicates that, overall, women's life expectancy gains have been smaller than what might have been expected in a context of egalitarian living conditions between the sexes.

5.3 Excess Female Mortality in Early Adulthood, a Cause of the Female Deficit?

The excess mortality of Chinese women relative to Chinese men before their fortieth birthday, as highlighted by the comparison with various other countries, is not in doubt. Its exact impact on the numbers of female deaths still needs to be estimated, however.

Using the same method for estimating excess infant and child mortality on the basis of the standardized ratios established by Hill and Upchurch (1995), we estimated excess female deaths between the ages of 5 and 40 in the 1990 and 2000 censuses with reference to the standardized ratios shown in Table 5.2. The simulations presented in Tables 5.3 and 5.4 give an indication of excess female deaths

[6] Calculations performed on data adjusted by the CPIRC (1995) for 1981 and 1990 and by Banister (2007) for 2000.

Table 5.3 Observed and standardized deaths and probabilities of dying, and estimated excess female deaths, China, 1990

	Observed female deaths and probabilities of dying (adjusted data)					Corrected female deaths and probabilities of dying on the based of standardized ratios (estimated)			
Age groups	Observed female population (a)	Observed female deaths (b)	Observed (c) female age-specific probabilities of dying ${}_nq_x$ (f)	Observed (d) male age-specific probabilities of dying ${}_nq_x$ (h)	Ratio ${}_nq_x$ (f)/ ${}_nq_x$ (h)	Standardized ratios ${}_nq_x$ (f)/${}_nq_x$ (h) (e)	Corrected female age-specific probabilities of dying ${}_nq_x$ (f) (f = d×e)	Corrected female deaths (g = (a×f)/5 or 10)	Excess female deaths (b)–(g)
5–9 years	47,705,868	29,974	0.0031	0.0042	0.740	0.731	0.0031	29,612	362
10–19 years	105,550,931	74,287	0.0068	0.0085	0.802	0.569	0.0048	51,028	23,259
20-29 years	112,282,693	134,332	0.0119	0.0144	0.827	0.521	0.0075	84,244	50,088
30–39 years	81,952,539	120,522	0.0146	0.0201	0.727	0.641	0.0129	105,601	14,922
Total	–	359,115	–	–	–	–	–	270,485	88,631

Sources: Estimates calculated on data taken from (a) PCO (1993); (b) PCO (2002); (c) and (d) CPIRC (1995); (e): values taken from Table 5.2, p. 65

Table 5.4 Observed and standardized deaths and probabilities of dying, and estimated excess female deaths, China, 2000

	Observed female deaths and probabilities of dying (adjusted data)					Corrected female deaths and probabilities of dying on the based of standardized ratios (estimated)			
Age groups	Observed female population (a)	Observed female deaths (b)	Observed (c) female age-specific probabilities of dying ${}_nq_x$ (f)	Observed (d) male age-specific probabilities of dying ${}_nq_x$ (h)	Ratio ${}_nq_x$ (f)/ ${}_nq_x$ (h)	Standardized ratios ${}_nq_x$ (f)/ ${}_nq_x$ (h) (e)	Corrected female age-specific probabilities of dying ${}_nq_x$ (f) (f=d×e)	Corrected female deaths (g=(a×f)/5 or 10)	Excess female deaths (b)–(g)
5–9 years	41,849,379	24,086	0.0027	0.0037	0.728	0.717	0.0027	22,485	1,601
10–19 years	110,204,889	50,232	0.0047	0.0070	0.674	0.541	0.0038	41,501	8,731
20–29 years	104,006,915	100,848	0.0094	0.0145	0.648	0.495	0.0072	74,437	26,411
30–39 years	114,959,746	139,122	0.0125	0.0206	0.606	0.626	0.0129	148,357	–9,236
Total	–	314,288	–	–	–	–	–	286,780	27,507

Sources: Estimates calculated on data taken from (a) PCO (1993); (b) PCO (2002); (c) and (d) CPIRC (1995); (e): values taken from Table 5.2, p. 65

before age 40, manifestly due to unequal living conditions between men and women. It thus appears that, with the notable exception of the 30–39 age group in 2000,[7] characterized by a female-to-male ratio of the age-specific probability of dying that is smaller than the standardized ratios, Chinese women exhibit what can be analysed as recurring excess mortality relative to Chinese men. The number of excess female deaths between the ages of 5 and 40 is estimated to have been roughly 88,600 in 1989 and more than 27,000 in 2000. Again, through simple interpolation, the excess female deaths in this age group can be estimated at around 697,000 between 1989 and 2000, representing an annual average of 58,069 over those 12 years. Consequently, the female deficit assumed to be due to excess female mortality can be estimated at around 190,200 per year (i.e. 58,069 annual excess deaths between the ages of 5 and 40, plus an annual average of 19,600 excess female child deaths, plus an annual average of 112,560 excess female infant deaths).

In the 1990s, the average number of girls eliminated each year by sex-selective abortion has been estimated at around 500,000–600,000 (see p. 25). These figures are consistent with the estimates made by Jiang et al. (2005), who estimated that a total of 6.3 million females were missing from the cohorts born between 1990 and 2000. That estimate is also consistent with those of Cai and Lavely (2003), who established a total female deficit of around 12 million in the cohorts born between 1980 and 2000.

In both cases, we obtain an annual average deficit of female births due to sex-selective abortion of around 500,000–600,000. The impact of excess female mortality before age 40 on the total female deficit therefore seems much smaller than that of sex-selective abortion. According to our estimates, excess female mortality could nevertheless be responsible for more than 190,000 excess female deaths every year. It could therefore be considered as one of the factors explaining the surplus of males in China's population.

Logically, excess female mortality before age 40 in China is slowing gains in female life expectancy. A simulation of the life table for Chinese women excluding excess female mortality before age 5 (i.e. using the corrected female age-specific probabilities of dying in infancy and childhood based on the expected ratios established by Hill and Upchurch 1995) raises female life expectancy at birth to 72.8 years in 1990 and 73.2 years in 2000, respectively 10.8 months (or 0.9 years) and 12 months (1 year) longer than the adjusted observed data (Banister 2007) (Table 5.5). Another simulation of the female life table, this time corrected for excess female mortality between birth and the fortieth birthday, raises female life expectancy at birth to 73.2 years in 1990 and 73.9 years in 2000, i.e. 1.3 and 1.7 years, respectively, above the initial values. These corrections thus bring the gender gaps in life expectancy at birth in China closer to those usually observed at an equivalent male life expectancy, raising them by 37 % (from 3.5 to 4.8 years) in 1990, and by 58 % (from 2.9 to 4.6 years) in 2000.

[7] This situation would seem to result from excess male mortality in this age group, due to changes in men's behaviour since the economic reforms, as explained previously.

Table 5.5 Female life expectancy at birth corrected for their excess mortality between 0 and 40 years, 1990 and 2000

	${}_1q_0$ (f)	${}_4q_1$ (f)	${}_4q_5$ (f)	${}_9q_{10}$ (f)	${}_9q_{20}$ (f)	${}_9q_{30}$ (f)	e_0 (f)	e_0 (m)	Gender gap in life expectancy (years)
1990									
Observed data (with discrimination)	29.4	9.6	3.1	6.8	11.9	14.6	71.9	68.4	3.5
Corrected data (after eliminating excess female mortality at ages 0–4)	*19.6*[a]	*7.4*	–	–	–	–	*72.8*	68.4	*4.4*
Corrected data (after eliminating excess female mortality at ages 0–40)	*19.6*	*7.4*	3.1	4.8	7.5	12.9	*73.2*	68.4	*4.8*
2000									
Observed data (with discrimination)	38.9	8.1	2.7	4.7	9.4	12.5	72.2	69.3	2.9
Corrected data (after eliminating excess female mortality at ages 0–4)	*20.3*	*6.1*	–	–	–	–	*73.2*	69.3	*3.9*
Corrected data (after eliminating excess female mortality at ages 0–40)	*20.3*	*6.1*	*2.7*	*3.8*	*7.2*	*12.9*	*73.9*	69.3	*4.6*

Sources: Line 1: data adjusted by the CPIRC (1995) for 1990; line 4: data adjusted by Banister (2007) for 2000; lines 2, 3, 5 and 6: corrections based on values taken from Table 5.2, p. 65

[a]The corrected data are in italics

While prenatal sex selection and sex-selective abortions seem to be the main cause of the gender imbalance at young ages and of the recent masculinization of China's population, the role played by excess female mortality, particularly before age 5 but also in early adulthood, should not be underestimated. In our efforts to explain the female deficit, this finding encourages us to look beyond the relationship between a preference for sons and sex-selective abortions, and to investigate the living conditions of women in China more broadly.

Appendices

Appendix 5.1: Maternal Mortality

The maternal mortality rate, which measures the percentage of female deaths attributable to pregnancy or childbirth, for every 100,000 live births is, in theory, a significant

indicator of the health conditions of the female population. It is only reliable, however, when it is calculated on the basis of accurate reporting of maternal deaths, which was not the case in China until the late 1980s (Tan 2006). The official data for that period show surprisingly low maternal mortality rates, as well as an equally implausible sharp rise between 1980 and 1990, when maternal mortality apparently increased by 140 % in cities and by 130 % in rural areas. Most of that increase should therefore be ascribed to more accurate identification and recording of this cause of death.

The data available from 1989, when China's Ministry of Health organized a national survey of maternal mortality, provide more plausible trends. In that year, maternal mortality was apparently 95 per 100,000 across the country, breaking down as 50 per 100,000 in urban areas, and 115 per 100,000 in rural areas. The data also show a sharp decline in maternal mortality nationwide to 62 per 100,000 in 1995, then to 53 per 100,000 in 2000. That rapid decline puts China in an enviable position in relation to the three other Asian giants (Bangladesh: 684 per 100,000; India: 440; Indonesia: 390), but a long way behind its closest neighbour, Republic of Korea, which reports 30 maternal deaths per 100,000 live births.[8] In 2010, the maternal mortality rate fell to 30 per 100,000.

The available data reflect a fairly steady decline in maternal mortality since the early 1990s, which can be attributed partly to progress in maternal and child healthcare since the late 1970s. It should also be remembered that the simultaneous steep decline in fertility and spacing of births mechanically reduced the risks associated with maternity and therefore the number of women dying from pregnancy or childbirth. It would also appear that the Chinese government's efforts to combat maternal mortality in the 1990s are starting to pay off in rural as well as urban areas.

Strong disparities persist between provinces, however. The provinces in central China, and even more so those in the west, are disadvantaged in terms of reproductive healthcare. Access to contraception is much more limited, and childbirth in hospital, which is the norm in the developed eastern provinces, is much less common: one birth in four takes place in hospital in Guizhou, and one in five in Tibet.

Whereas in 2000 the infant mortality rate in Beijing and Shanghai was similar to that in developed countries (around 5 per 1,000 live births), in Xinjiang, more than 1 child in 20 died before its first birthday. Maternal deaths, which were very low in Beijing and Shanghai (fewer than 10 per 100,000 live births), were 10–40 times more frequent in the western provinces, at more than 140 per 100,000 in Guizhou, Qinghai and Xinjiang, and 466 in Tibet. Overlapping with economic disparities and differential access to healthcare, the different provinces are characterized by profound inequalities in terms of access to information and services.

[8] For India, Indonesia and Korea, these are World Bank estimates based on population samples, in *World Development Indicators 1999*, The World Bank. Data for Bangladesh are taken from: http://www.worldbank.org

Reproductive health indicators in selected eastern and western provinces, 2000

Provinces	Contraceptive prevalence (%)	Childbirth in hospital (%)	Infant mortality (per 1,000 live births)	Maternal mortality (per 100,000 live births)
Eastern provinces				
Beijing	87.8	99.5*	5.4	9.7
Tianjin	91.1	99.7*	9.4	18.6
Shanghai	91.0	99.4*	5.1	9.6
Jiangsu	91.1	98.9	11.2	28.5
Zhejiang	91.1	98.7	15.6	19.6
Western provinces				
Guizhou	90.1	38.9*	38.8	141.7
Tibet	71.1	29.8*	35.3	466.3
Gansu	87.5	62.5*	28.9	108.8
Qinghai	86.9	66.4*	41.0	142.0
Xinjiang	82.7	69.0*	55.5	161.4

Sources: Attané (2006b) except the asterisked data, which are taken from Tan (2006)

The low prevalence of hospital births until the 2000s remained one of the main factors in maternal mortality: in 1985, fewer than half of Chinese women (43.7 %) gave birth in hospital, of whom 73.6 % in cities and 36.4 % in the countryside. In 2000, the percentage rose to 72.9 % nationwide, although with sharp disparities between urban and rural areas: 84.9 and 65.2 % respectively (WMC 2004). Strong inequalities between provinces were observed, with the percentage of births in hospital above 99 % in Beijing, Tianjin and Shanghai, but only 30 % in Tibet, 39 % in Guizhou, and 60–70 % in Yunnan, Gansu, Qinghai and Xinjiang, for example (Tan 2006).

Appendix 5.2: Women and Suicide

Poverty, persecution by their mothers-in-law or an inability to produce a male child are driving more and more rural women to suicide. An ordinary scene in the Chinese countryside: it is dinner time in the Zhang household, a family of farmers who live in a village of around 100 houses in central China. In the main room, lit by a single neon, the men sit around a low table, eating, talking, smoking and drinking rice wine. Around them, the women who made the meal stand silently in the shadows, watching on. When the sons, brothers and husbands leave the table, the women will eat the leftovers from their bowls. That will mainly consist of zhou, or rice water, to which they will add a few vegetables. It has been this way for thousands of years. The Zhang are neither poor nor rich. They are middling peasants that trade with the small towns in the region. Two of the sons even went to work in Shanghai for 3 years. But women in remote rural areas still have a second-class status. A woman's role is to have children, preferably male heirs, be hardworking and

faithful to her husband. Half a century of Communism has done nothing to change these traditions.[9]

The most common method of suicide is swallowing pesticides:

> A 24-year-old woman attempted to commit suicide. Her husband had left for the city to look for work and her mother-in-law was making life difficult for her. Her first child was a girl and she had just given birth to a second daughter. Forced to pay a high fine for breaking the one-child rule, the family criticized her for not being able to conceive a boy, the only insurance policy for the parents' old age.[10]

Suicide is not disapproved of in Chinese culture: after a humiliation, a disappointment, a family feud, suicide offers a respectable way out. "Women around here used to hang themselves or throw themselves into the well, but there weren't nearly as many suicides as there are now," says Grandma Zhang, 78.

> My neighbour was 35. Her three children were already grown up, but they didn't have enough land. Just one mu[11] for the whole family. She said she didn't see any point in going on living.[12]

The countryside is suffering the adverse effects of the economic reforms and is severely strained by the contradictions of the system. Social pressure; tyrannical mothers-in-law; insufficient land; rising poverty; men who migrate to the cities, leaving the villages populated by women, old people and children; an excessively strict birth control policy, etc. Rural women are starting to realize that a different kind of life is possible in the cities, with all the dreams fuelled by consumer society. But when those dreams remain mirages, the only solution left to them is suicide, which is widespread in rural areas, where people have fewer opportunities to express their grievances or seek redress in the courts.

Appendix 5.3: Female-to-Male Ratio of the Probabilities of Dying in Different Age Groups at a Given Level of Male Life Expectancy at Birth in Various Countries

Country	Years	Male life expectancy at birth e_0	Age group			
			5–9 years	10–19 years	20–29 years	30–39 years
Australia	1946–1948	66.1	0.716	0.558	0.749	0.907
	1970–1972	67.9	0.724	0.447	0.394	0.625
	1975–1977	69.5	0.710	0.395	0.350	0.563
Austria	1949–1951	61.9	0.716	0.658	0.677	0.735
	1980–1982	69.2	0.712	0.382	0.308	0.494

(continued)

[9] The testimonials in italics are taken from Puel C. (1999). Les Chinoises tentées par la mort. *Libération,* 23 April 1999.

[10] Puel C., op. cit.

[11] A *mu* is 1/15 of a hectare.

[12] Puel C., op. cit.

(continued)

Country	Years	Male life expectancy at birth e_0	Age group			
			5–9 years	10–19 years	20–29 years	30–39 years
Belgium	1928–1932	56.0	0.898	0.970	0.944	0.883
	1959–1963	67.7	0.738	0.494	0.430	0.604
	1968–1972	67.8	0.697	0.477	0.447	0.579
Canada	1951	66.3	0.725	0.600	0.583	0.765
	1966	68.7	0.749	0.443	0.358	0.575
	1971	69.3	0.767	0.439	0.367	0.582
Denmark	1921–1925	60.3	0.949	1.021	0.997	1.171
	1956–1960	70.3	0.622	0.510	0.516	0.824
England and Wales	1960–1962	68.1	0.674	0.460	0.505	0.725
Finland	1946–1950	58.4	0.700	0.772	0.609	0.612
	1986–1990	70.7	0.591	0.423	0.306	0.334
France	1910	49.5	1.070	1.067	0.899	0.838
	1954	65.0	0.738	0.603	0.593	0.652
	1966	67.8	0.719	0.479	0.437	0.507
Germany	1996–1998	74.0	0.721	0.472	0.363	0.476
Federal Republic of Germany	1949–1951	64.5	0.752	0.646	0.632	0.730
	1986–1988	72.2	0.628	0.478	0.386	0.527
Greece	1955–1959	66.3	0.796	0.692	0.716	0.768
	1960–1962	67.4	0.822	0.701	0.677	0.760
	1980	72.1	0.791	0.481	0.419	0.458
Ireland	1990–1992	72.2	0.771	0.463	0.326	0.531
Japan	1957–1958	63.8	0.806	0.757	0.744	0.831
	1985	74.8	0.585	0.409	0.451	0.556
	1968–1969	69.2	0.636	0.551	0.537	0.612
Netherlands	1951–1955	70.7	0.651	0.612	0.588	0.849
New Zealand	1934–1938	65.4	0.820	0.698	0.883	0.918
Norway	1911–1915	56.3	0.926	0.938	0.767	0.909
	1946–1950	69.0	0.618	0.654	0.665	0.710
	1995	74.8	0.867	0.384	0.328	0.493
Republic of Korea	1970	59.8	0.829	0.810	0.790	0.867
Sweden	1946–1950	69.0	0.584	0.687	0.691	0.842
	1982–1986	73.7	0.626	0.499	0.398	0.530
Switzerland	1910–1911	50.6	0.957	1.144	1.028	0.869
	1920–1921	54.5	0.991	0.998	1.067	0.917
	1948–1953	66.3	0.685	0.567	0.553	0.699
	1950–1960	67.7	0.636	0.489	0.441	0.656
	1958–1963	68.7	0.675	0.451	0.399	0.596
Taiwan	1956–1958	60.2	0.885	0.844	0.841	0.823
United Kingdom	1981–1983	71.0	0.715	0.463	0.443	0.654

Sources: Column 1: (except Japan) data from the Human Life-Table Database, developed jointly by Max Planck Institute for Demographic Research, Rostock, Germany, Department of Demography at the University of California, http://www.lifetable.de/cgi-bin/datamap.plx

The data for Japan are from the Abridged Life Tables, Institute of Population Problems, Ministry of Health and Welfare, Research Series, for the corresponding years; Columns 2–5: calculations based on the same sources