CHAPTER 7

System

. . . taking the preventive check in its general acceptance, as implying an infrequency of the marriage union from the fear of family, without reference to its producing vice, it may be considered in this light as the most powerful of the checks which in modern Europe keep down the population to the level of the means of subsistence.

MALTHUS, *AN ESSAY ON THE PRINCIPLE OF POPULATION* (1803)

Malthusian Legacy

For Malthus, moral restraint explained the success of the European demographic system, and England was the most conspicuous example of such behavior and such affluence. Malthus begins his analysis of English society with the assertion that "throughout all ranks the preventive check to population prevails to a considerable degree" (1826/1986, 236). He then elaborates on the differing rationales for such behavior among each rank, from the higher classes, down through gentlemen, tradesmen, and farmers, to laborers and servants. According to Malthus, such behavior encouraged savings and discouraged poverty, by restricting population growth. More important, delayed marriage kept the price of labor and savings rates high and assured general prosperity.[1]

Recent studies by E. A. Wrigley and R. S. Schofield have confirmed the Malthusian model of English population processes (Wrigley and Schofield 1985; Schofield 1985; Wrigley et al. 1997). Not only did many women (5–25 percent) never marry, but the proportions fluctuated considerably according to economic conditions. These changes in nuptiality had a great influence on population growth rates in all periods, and a dominant influence in the eighteenth century, both because of a decline in the proportion of unmarried men and women aged

40–44, from one quarter to one-tenth, and because of a decline in the age of marriage from 26 to 23. Until the middle of the eighteenth century, the substantial swings in nuptiality that occurred were produced almost exclusively by wide variations in the proportions of women never marrying. Thereafter there was little change in the proportions, only a change in marriage age.

These studies have also advanced the understanding of the relationship between real wages and marriage rates. While Malthus' supposition that marriages would rise and fall more or less in line with the price of labor is correct, there is a significant lag between the two, "about 15 to 20 years at each of the major turning points" (Wrigley and Schofield 1981, xxi). People, in other words, married according to the state of the economy when they were children rather than according to its state when they were adults. The lag between their wages and their date of marriage may therefore have been linked to the timing of their entry into the job market and their subsequent rate of savings. Once they amassed the necessary resources to establish an independent household, they married regardless of current conditions. But while good times and bad times may not have influenced current marriages, they accelerated or delayed accumulation, and therefore influenced both the timing and probability of future marriages.

Wrigley and Schofield differentiate between two contrasting ideal models of the relationship between population and economy, based on the Malthusian distinction between positive and preventive checks. "High"-pressure demographic regimes are situations in which both fertility and mortality are high, population is large relative to available resources, and growth is curbed principally by the positive check. "Low"-pressure regimes are the reverse. Since low-pressure regimes are more able to accommodate the tension between production and reproduction in the long run, they are also better able to resist price shocks. In contrast, in high-pressure regimes, particularly one variant that Wrigley and Schofield call the "Chinese situation" (1981, xxiv), social conventions made early and universal marriage mandatory. Although the disease environment was less deadly than in other high-pressure regimes, fertility was high, and because rapid growth had to be short-lived, mortality was high too. In the "Chinese" case, in other words, high fertility was caused by high nuptiality, and in turn caused high mortality.

Chinese Reality

The problems with this Chinese ideal model are now obvious. As a result of China's long history as the largest national population and the most densely settled nation,[2] the Chinese evolved a demographic system early on of low marital fertility, moderate mortality, but high rates of female infanticide, and consequently of persistent male celibacy. While the roots of such a system have yet to be traced in detail, we can identify specific characteristics such as infanticide from the first millennium B.C. In contrast to the European system, in which marriage was the only volitional check on population growth, the Chinese demographic system had multiple conscious checks, and was therefore far more complex and calculating than Malthus or his successors thought. As a result, even though Chinese female marriage was universal and early, population never pushed the economy to subsistence levels.

We have already identified the existence of a Chinese demographic system in the past and traced its legacy to the present. We can further differentiate two variant models. "Endogenous restraint" describes the interrelationship of the four salient components: infanticide, which we discussed in Chapter 4; male celibacy and fictive kinship, which we discussed in Chapter 5; and marital restraint, which we discussed in Chapter 6. "Exogenous stress" describes their interrelationship when the system is subject to short-term exogenous pressure from climatic, economic, or epidemic causes.

Endogenous Restraints

Under the endogenous model, Chinese families constantly adjusted their demographic behavior according to their economic and social circumstances and expectations. Figure 7.1 presents a schematic of such endogenous restraint. Chinese relied on marital restraint to keep fertility low to moderate. Not only did married couples wait a substantially longer time to initiate reproduction than their European counterparts; they also ended their reproductive life much earlier. Influenced by a different culture of sexuality, and under the close supervision of the collective family, Chinese couples were able to control the "passion between the sexes." When they wanted to have a child, they could accelerate childbearing. Otherwise they could abstain, and

wait. Chinese couples also had access to traditional contraceptive and abortive technologies. Marital fertility was consequently much lower than European fertility.

In addition, Chinese families also killed some of their children. As a result, they could not only reduce family size, but also control family composition by sex. Consequently, while some couples resorted to infanticide when marital restraint failed, others engaged in infanticide to reduce the number of daughters or sometimes sons. While the incidence of infanticide varied considerably over space and time, the combination of infanticide and marital restraint meant that the number of children who survived to adulthood per couple was significantly lower than in other societies with similar model mortality levels.

Female infanticide caused a shortage of marriageable women and consequently an increase in the variant forms of marriage. While a significant number of Chinese men in the past married very late or never, Chinese women generally married quite early. Competition in the marriage market was so intense that the only way some men could marry was uxorilocally or to previous agnate or adopted kin. These variant marriages were in turn characterized by fertility rates that were lower, sometimes considerably lower, than for major marriages and divorce rates that were two to four times higher than for major marriages. Thus the imbalanced marriage market checked population growth not only by increasing the shortage of females but also by lowering marital fertility.

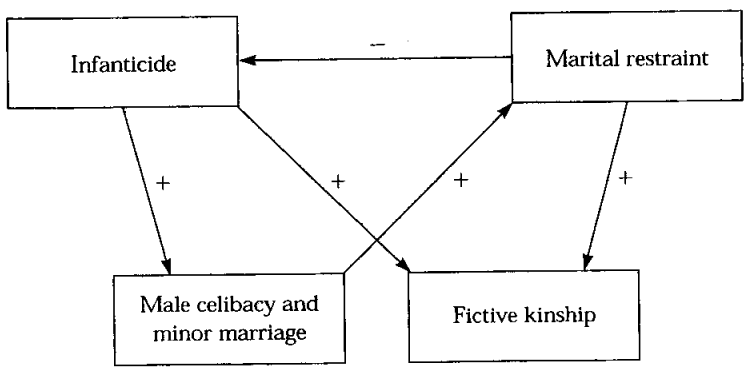


Figure 7.1. Constrained population growth, endogenous restraints

Such low marital fertility rates provided a major check to population growth in the Chinese demographic system. According to William Lavely and R. Bin Wong (1998), a female infanticide rate of 10 percent could reduce the annual population growth rate by approximately 30 percent. Similarly, an extension of their analysis to include fertility would suggest that if Chinese had followed European marital fertility rates, population growth could have been 50 percent higher. Low marital fertility, in other words, had a greater effect on population growth than female infanticide. While sex-selective infanticide was responsible for the differential pattern of nuptiality by sex in the Chinese demographic system, fertility was more directly responsible for China's low to moderate growth rates.[3]

Adoption, the last distinguishing characteristic of the Chinese demographic system, was also a product of both female infanticide and low marital fertility.[4] The effect was sex specific. Chinese couples adopted girls because as a result of female infanticide they could not obtain daughters-in-law. They adopted boys because as a result of low fertility they might not be able to produce an heir. Indeed, the number of couples finding themselves without direct biological descendants exceeded the proportions normally predicted for such low fertility and high infant mortality. Among the imperial nobility, for example, as many as 20 percent of all couples had no male descendants, almost twice the predicted proportions (Wrigley 1978). Some of these sonless couples were biological. Others incorrectly predicted their own subsequent fertility or the subsequent survivorship of their children. Still others were victims of the excessive demands of the Confucian family for denial and sacrifice.

In consequence, the Chinese developed high rates of fictive kinship in addition to variant marriage forms to overcome the limitations of biology, imperfect decision making, and dictatorial abuse. In addition to the approximately 10 percent of sons who were allied by fictive kinship through uxorilocal marraige and the similar or larger proportion of daughters who were allied by fictive kinship through little-daughter-in-law marriage, Chinese families adopted several percent of all births directly. Table 7.1 summarizes the proportion of adoption exclusive of marriage. Although the rates vary by location, period, and population, they indicate that at least 1 of every 10 to 100 Chinese children in the past was given up for adoption, a share almost an order of magnitude larger than any early modern Western population.[5]

Table 7.1 Adoption rates, China, selected periods and populations

Period	Location	%	Number
1730	Beijing	5.9	662
1750	Beijing	6.1	897
1790	Beijing	11.8	1,145
1840	Beijing	6.2	1,087
1906–1910	Taiwan	5.8	666
1911–1915	Taiwan	7.2	758
1916–1920	Taiwan	5.6	750
1921–1925	Taiwan	5.9	819
1926–1930	Taiwan	4.5	968
1931–1935	Taiwan	3.1	1,070
1929–1933	Southern China	0.8	2,679
1929–1933	Southwest Plateau	2.7	2,100
1929–1933	Lower Yangtze	1.3	14,321
1929–1933	Northern Plain	1.2	18,985
1970	China	0.7	50,100
1980	China	1.1	35,104
1986	China	2.2	43,560

Sources and notes: Beijing: Wang and Lee (1998). The rate is the number of adopted sons per 100 sons who survived to age 5. Years refer to year of birth. Taiwan: A. Wolf and Huang (1980, 207); years refer to year of birth. China 1929–1933: A Wolf and Huang (1980, 328), based on a survey of 35,976 families in 101 localities in China by J. Lossing Buck. China 1970, 1980, and 1986 are calculated from China's nationally representative 1988 Two-per-Thousand Fertility Survey conducted by China's State Family Planning Commission. Rate refers to the ratio of reported adoptions to live births, and sample size refers to the number of live births.

While contemporary recording of adoption is incomplete, the scale of adoption appears to be only slightly lower than in the past.

Such adoptions serve many purposes besides charity or parenthood. Chinese parents also adopt children to obtain family labor or support in old age, to marry their children, and to maintain ritual and religious continuity.[6] Consequently, they adopt children at all ages, from infancy well though adulthood, and on rare occasions even into old age.[7] We can distinguish as many forms of adoption as there were of marriage. Parents can adopt daughters as well as daughters-in-law, sons as well as sons-in-law.[8] So can widows, widowers, never-married men, even eunuchs. The entitlement to children and, most important, to a patrilineal male descendant was so important that it overrode the limitations of human and social biology.

Most adoption was therefore among relatives rather than strangers. This was partly because of the importance of the patrilineal descent line,[9] partly because of the collective familial mentality, and partly because the joint social pressure from both biological and adopting families constrained adopted children to live up to their parental expectations. Intralineage adoption was also a legal requirement.[10] As a result, adopted children, unlike in the West, are often aware of their biological origins. Even today, Chinese continue to differentiate between adoption between relatives *(guoji)* and nonrelatives *(baoyang)*.[11] In any case, the high prevalence of adoption in all its various forms was not only a product of the desire of some parents for fewer children, but also important insurance that no one went childless.

Adoption, in other words, was not only a prominent feature but also an integral part of the Chinese demographic system. Adoption rates therefore depended on the level of both fertility and mortality. Figure 7.2 illustrates the relationship between fertility, infanticide, and adoption in one well-documented population, the Qing imperial nobility from 1700 to 1850. At the beginning of the eighteenth century, when fertility was high and female infanticide was low, the adoption rate was low, less than 2 percent. It rose gradually during the first half of the eighteenth century as fertility declined and infanticide increased, peaked at 12 percent in the late eighteenth century, and returned in the early nineteenth century, along with infanticide, to the levels of the early eighteenth century.

Thus the Chinese demographic system was characterized by a multiplicity of choices that balanced marital passion and parental love with arranged marriage, the need to regulate coitus, the decision to kill or give away children, and the adoption of other children. Chinese families constantly adjusted their demographic behavior according to their familial circumstances to maximize their collective utility. Such demographic adjustment allowed them to prosper even under stress, if at the cost of considerable individual sacrifice.

Exogenous Stress

Chinese parents, moreover, not only had to balance the competing entitlements of family members; they also had to adjust this balance according to external economic conditions. Economic fluctuations affected demographic behavior. Figure 7.3 depicts the Chinese demographic system under one such exogenous economic stress, a rise in grain prices. The result was an increase in both marital restraint and infanticide and a slight postponement of marriage.

In most pre-industrial societies, when grain prices increased, death rates usually rose, and marriage rates and fertility rates decreased (Dupâquier et al. 1981; Bengtsson, Fridlizius, and Ohlsson 1984; Weir 1984a; Bengtsson and Ohlsson 1985; Landers 1986; Galloway 1988, 1994). China was no exception. Grain prices had a large effect on both fertility and mortality in late imperial Chinese populations. Moreover,

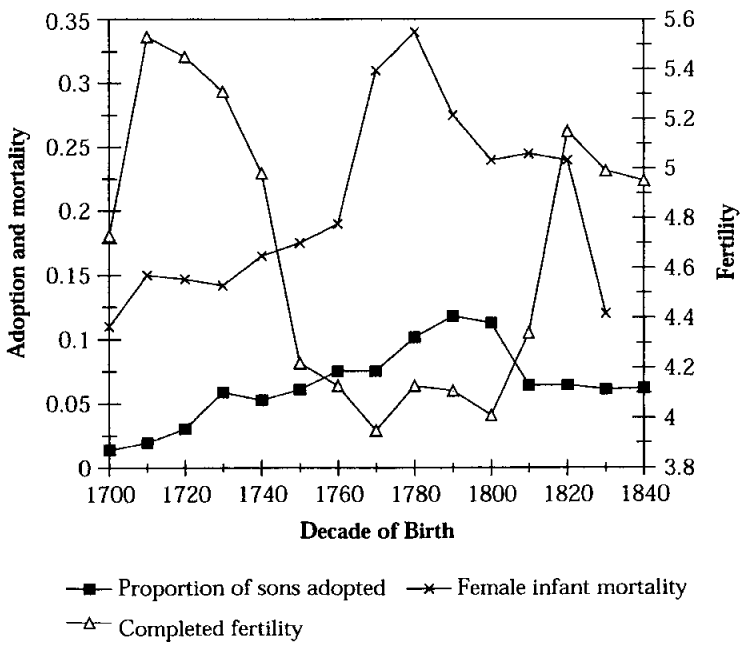


Figure 7.2. Adoption and population behavior, Qing imperial lineage, 1700–1850
Source: Wang and Lee (1998).

they did so instantaneously. Table 7.2 shows that male and female crude birth rates in rural Liaoning were negatively correlated with grain prices and that male crude death rates were positively correlated with grain prices. The lack of overt correlation between female crude death rates and grain prices is largely a result of poor registration of female infanticide. As prices rose, so did female infanticide, resulting in lower recorded female births. Other studies have found that female infant and child mortality correlated strongly with grain prices (Lee, Campbell, and Tan 1992; Lee and Campbell 1997). This combination of infanticide and late registration explains the even stronger negative correlations of birth registration, especially female births, with grain prices.

The multiple opportunities in the Chinese demographic system to control specific births, marriages, and deaths, however, meant that the response to economic conditions could vary greatly from individual to individual. There is already a body of techniques available to analyze such individual-level response.[12] Most studies of Chinese population history to date, however, have focused on populations exclusively in Liaoning Province and on mortality (largely excluding infanticide), which is less responsive than fertility, and maybe even nuptiality, to

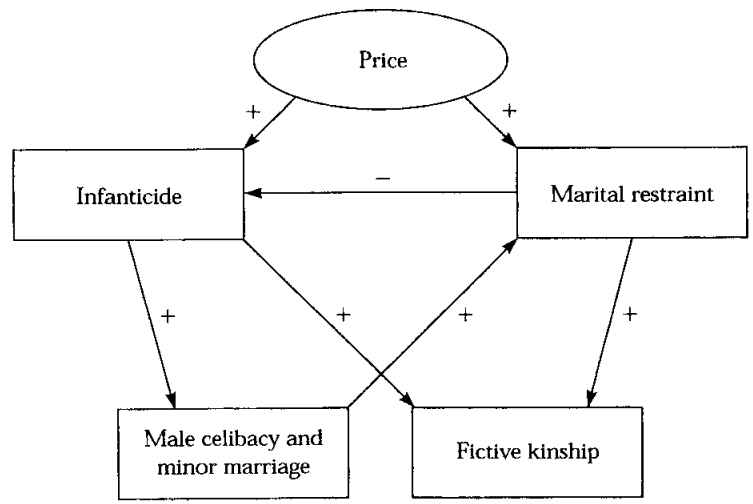


Figure 7.3. Constrained population growth, exogenous stress

Table 7.2 Correlations of grain prices and death and birth rates, rural Liaoning, 1774–1873

	Household death rate		Household birth rate					
			All		Complex[a]		Simple[b]	
Grain	Female	Male	Female	Male	Female	Male	Female	Male
Rice								
High	—	—	−0.62	—	−0.46*	—	−0.46*	−0.36
Low	—	—	−0.60	−0.37*	−0.48	—	−0.54	−0.46
Millet								
High	—	—	−0.65	−0.37	−0.55	−0.33*	−0.50*	−0.56
Low	—	0.32	−0.49	—	−0.42*	—	—	−0.45
Sorghum								
High	—	—	−0.57	—	−0.46*	−0.33*	−0.39*	−0.39
Low	—	0.26	−0.58	−0.40*	−0.54	—	−0.46*	−0.49
Wheat								
High	—	—	−0.68	—	−0.36*	—	−0.54	−0.34
Low	—	0.43	−0.44	−0.38*	−0.48	—	—	−0.39
Soybean								
High	—	—	−0.45*	—	−0.63	—	—	−0.51
Low	—	0.39	−0.57	−0.40*	−0.36	—	−0.40*	−0.47

Source: Lee and Campbell (1997).

Note: All correlations have a significance of 0.001 unless marked with an asterisk, in which case the significance is 0.01. —indicates correlations with a significance of less than 0.01. Our calculations begin from 1774 for all households and from 1789 for the breakdown by simple and complex households, and end in 1840 for female births and in 1873 for male births. The prices are adjusted annual averages from Fengtian prefecture; the birth and death rates are annual rates from Daoyi and surrounding communities.

a. Households with two or more conjugal units.

b. Households with only one conjugal family unit.

social and economic differentiation and less sensitive to temporal change (Campbell and Lee 1996, forthcoming). Nevertheless, these results have already identified a variety of social relations or combination of relations who were particularly vulnerable to changes in economic conditions.

As a result, we can now appreciate the subtle nuances of discrimination, privilege, affect, and alienation partially hidden by the facade of Confucian hierarchy. As we might expect, for example, male orphans were cared for by other family members, while female orphans were neglected. Liaoning female orphans had much higher death rates than females with at least one parent present, while the death rates of male orphans were similar to those of other male children. More surprisingly, mothers-in-law were beneficial to their daughters-in-law. Married women had lower mortality if their mother-in-law was alive regardless of age. Young (16–35 *sui*) widows had substantially higher death rates than married women of the same age, while older (36–55 *sui*) widows had death rates similar to those of married women of the same age. Old men were more dependent on their wives than their wives were on them: elderly women (56–75 *sui*) were unaffected by whether their husband was still alive, but elderly men had much higher mortality if they had been widowed. Meanwhile, even though male children and grandchildren were supposedly a form of old-age security, neither male nor female mortality among the elderly appears to have been reduced by the presence of living sons or grandsons.

Such analyses reveal the degree to which the household was able to allay the impact of immediate economic conditions (Lee and Campbell 1997; Campbell and Lee forthcoming). Mortality differentials by household and lineage context in Liaoning were generally narrower when prices were high than when they were low, perhaps because when times were good, household members did not share the bounty equally. Privileged members of the household appropriated a disproportionate share of the surplus, leaving less privileged members not much better off than when times were bad. As prices increased, differentials narrowed because the consumption of resources by privileged members of the household fell to the level of less privileged members of the household. Pressure, in other words, reduced the benefits of hierarchy.[13]

Population Growth

Historically, a set of demographic mechanisms, primarily low female survivorship and low marital fertility, enabled China to maintain low population growth at the aggregate level—an annual growth rate of less than 5 per 10,000, far lower than population growth rates elsewhere—until modern times.[14] These adjustments perpetuated a homoeostatic demographic regime in China for almost two millennia. In the first century A.D. there may already have been as many as 75 million Chinese. By 1700, notwithstanding a frontier expansion that

more than doubled China's territory, Chinese population had also only doubled.

Beginning in the eighteenth century all this changed. Between 1750 and 1950 China's population almost tripled, from 225 to 580 million, an annual rate of 5 per 1,000. Since 1950 China's population has doubled, from 0.58 to 1.2 billion, an annual rate of almost 2 per 100. Population growth, in other words, increased in each period by an order of magnitude.

The Chinese fertility transition is quite different from the stylized Western transition. Figure 7.4 replicates a matrix drawn by Judah Matras and others and contrasts the Chinese transition with transitions elsewhere. The matrix identifies four types of fertility regime, classified by early or late marriage age and high or low fertility control (Matras 1965; Macfarlane 1986). As Malthus would have predicted, the transition in Western European, particularly English, society followed the path from C to D: marriage age was already relatively late, and the fertility transition essentially involved only a shift from uncontrolled to controlled fertility. By comparison, fertility transition in

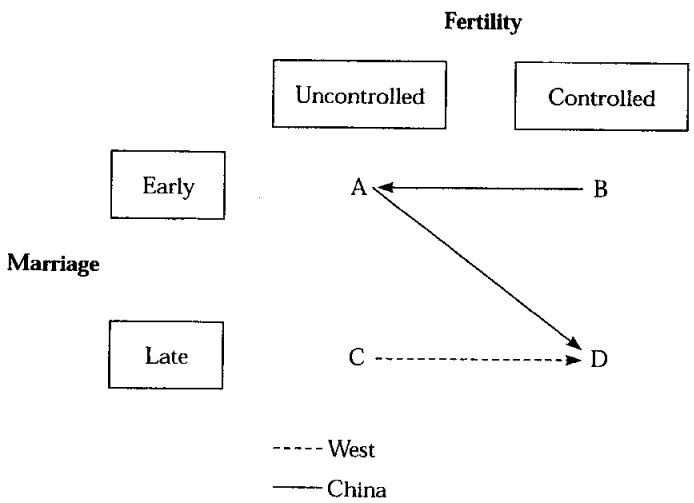


Figure 7.4. Fertility transition, China and the West

most developing countries requires both fertility control and a postponement of marriage age, which means a move from A to D.

China followed a far more complex path. The Chinese fertility transition did not resemble either the Western one or the general pattern prescribed for developing societies. Rather, it shifted first from B to A, and only then from A to D. Fertility was originally low. But with the rise of economic opportunities in the eighteenth century and the deterioration of familial authority in the twentieth century, Chinese fertility control relaxed, shifting the fertility regime from B to A. This resulted in two stages of population growth: a slow rise in population over two centuries, from 150 million in 1700 to 500 million in 1900, and the recent population explosion, which has doubled population in just fifty years, from 580 million in 1950 to over 1.2 billion. This explosion, however, in turn generated a collective desire to renew population control and produced the current family planning program, moving China from A to D.

Phase one: The rise of economic opportunities. The first stage, from B to A, appears to have been largely a response to economic opportunity. Figure 7.5 illustrates the response of the Chinese demographic system. Marital restraint and infanticide declined as parents identified the rise in employment possibilities. With the decline in female infanticide, marriage opportunities opened for unmarried males. There was less rationale to engage in variant marriages. There was also less need for fictive kinship of any kind.

In China this shift occurred in a variety of locations and in two phases. First, increased economic opportunities from frontier expansion attracted people to leave their homes and settle the Chinese periphery. Simultaneously the increasing division of labor and consequent rise in commerce gave these settlers incentives to cultivate large surpluses so they could exchange grain and a variety of commercial/industrial crops for finished products and money. Infanticide subsided, fertility control relaxed, and population consequently grew. This phase took place gradually, though not monotonically and universally, between the eighteenth and early twentieth centuries.[15]

As a result of these processes of agricultural expansion and rural labor intensification, described in Chapter 3, much of the spectacular increase in China's population occurred in the countryside, wherever empty land was available. The initial rise in China's population, unlike the rise of Western population, was not a product of industrialization

and concomitant urbanization. The urban proportion of China's population grew slowly in comparison with other large populations in similar stages of growth. In 1700 the urban proportion of the population was at most 5 percent—roughly the same as in England. But whereas the urban population in England soared to 85 percent of the national population in 1900 and to over 90 percent today, the urban population in China increased to only 10 percent in 1900 and to 30 percent today (De Vries 1984; G. Skinner 1986). In China, large-scale urbanization is a relatively recent and still incomplete phenomenon.

Instead, most population growth during the last two to three centuries has occurred in China's frontier provinces. Map 7.1 shows the growth rates by province from 1776, the first year with relatively complete population reporting, to 1990, the most recent modern national census available. Most provinces in China proper grew at rates roughly commensurate with the national average, 0.5–1 percent a year. The only major exceptions are the Lower Yangzi provinces, where population growth rates were exceptionally low.[16] By contrast,

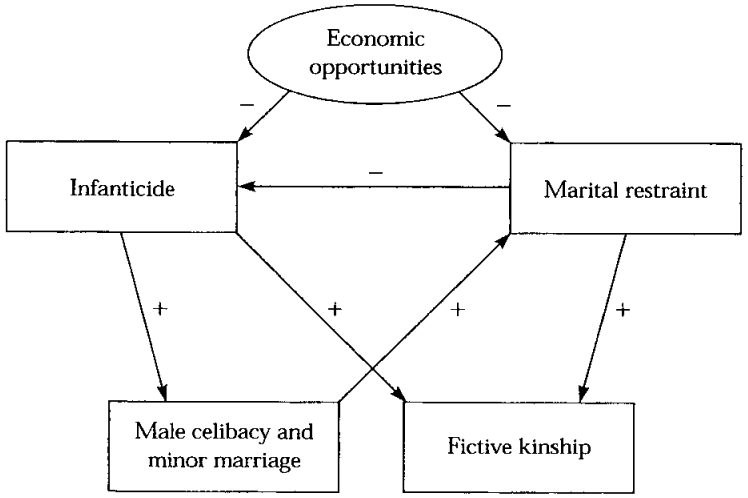
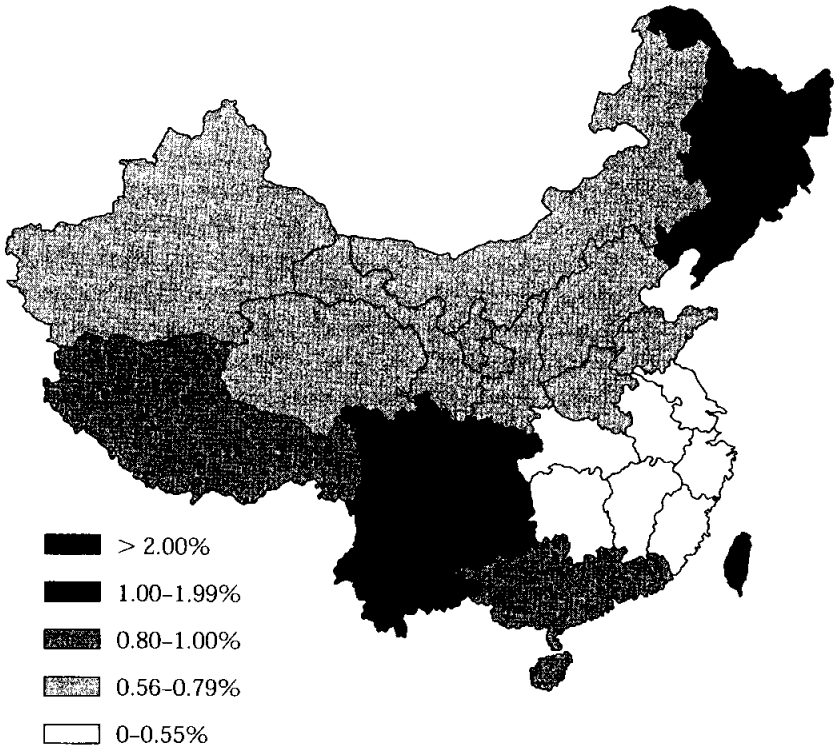


Figure 7.5. Population growth and the Chinese demographic system, eighteenth to early twentieth centuries

most provinces in greater China grew at much faster rates, between 1 and 2 percent. In the Upper Yangzi, southwestern, and especially northeastern provinces, population growth rates were exceptionally high. From the late eighteenth to early twentieth centuries, while the regional proportion of national population shrank in the Lower Yangzi, from 28 percent to 17 percent, the regional proportions tripled from 6 to 15 percent in the southwest, quadrupled from 3 to 12 percent in the Upper Yangzi, and swelled by almost an order of magnitude, from less than 1 percent to 9 percent, in the northeast.[17]

Such high rates of population growth along the frontier were a product of migration as well as of natural increase. We can identify several successive waves of internal migration and frontier settlement



Map 7.1. Population growth rate by region, China, 1776–1990
Sources: Liang Fangzhong (1980); Yao and Yin (1994).

during the last three centuries (Lee and Wong 1991; Ge, Cao, and Wu 1993; Ge 1997). Ten million migrants, principally from the Middle Yangzi, settled the Upper Yangzi. Three million migrants from the Middle Yangzi and the Upper Yangzi settled the southwest. Another 12 million migrants from northern China settled the northeast. Millions more moved shorter distances—from Fujian to Taiwan, from Jiangbei to Jiangnan, from Guangdong to Guangxi, from Shaanxi to Gansu, from Gansu to Xinjiang—while others moved abroad to Southeast Asia and even beyond. While the overall number of settlers is impossible to reconstruct completely, the impact of these migrations on China's demographic map was profound. In the mid-eighteenth century, the six most popular provinces for frontier settlement (Sichuan, Yunnan, and Guizhou in the west and southwest; Liaoning, Jilin, and Heilongjiang in the northeast) accounted for only 5 percent of the national population. By the early twentieth century they accounted for 25 percent of all Chinese (Liang Fangzhong 1980).

Population increase, in other words, was tied to a sharp increase in geographic mobility in late imperial China (Lee 1978, 1982b). We have not yet identified the specific mechanisms that produced such migratory waves.[18] We do know that they differed considerably by region. Most settlers came largely from northern China and the Middle Yangzi. Together they accounted for a residential population of some 120 million people in 1776 and 180 million in 1912—that is, between 40 and 45 percent of the registered population—and an emigrant population, including descendants, that by the early twentieth century was almost as large. In these regions, people perceived new economic opportunities on China's internal and external frontiers and responded by increasing their numbers to fill these jobs.

Phase two: The decline of the familial collective. The second phase of China's population growth was the product of the combination of new economic opportunities arising from Communist reforms and a revolution in social relations that the Chinese euphemistically call socialist reconstruction. Frontier settlement continued until 1960. In Heilongjiang, in the northeast, the annual in-migration rate from 1954 to 1960 was above 100 per 1,000—double the national average. By 1960 one of every six residents in Heilongjiang had been born elsewhere. Net in-migration was similarly high in five other popular frontier provinces (Neimenggu in the north; Gansu, Ningxia, and Xinjiang to the northwest; and Qinghai to the west) until 1960 with the establishment of the household registration system (Zhuang 1995). With the exception of Shandong, which continued to export migrants,[19] however, most of these new migrants came from the provinces settled during the first wave of frontier migration. Moreover, overall, their impact on Chinese population growth and distribution was far less than previous migrations. Together these six provinces accounted for 6 percent of the national population in 1950. By 1990 they had grown to only 9 percent.

In contrast with the rise in population during the late imperial period, urban migration during the twentieth century was numerically more important than frontier migration. Between 1949 and 1957, while the total gross value of agricultural products did not even double, total industrial value increased almost sixfold, heavy industrial output increased tenfold.[20] This process of rapid industrialization added 30 million urban jobs between 1949 and 1962, tripling the urban labor force (SSB 1982b, 17). By comparison, rural labor during the same time increased only 29 percent, an order of magnitude less.[21] Urban population consequently grew by 215 percent, from 58 million in 1949 to 124 million in 1959, while the rural population increased by only 13 percent, from 484 to 548 million (Zhuang 1995, 3). Fertility in the 1950s, in other words, like fertility in the 1850s and the 1750s, was largely a response to increased economic opportunity. If these rates had persisted in China through the 1960s, China's population would not have grown as fast in the last half-century and might already be below that of India.

That is not the case because of a population explosion in the countryside that started in 1961, in the aftermath of the Great Leap Forward, and continued unchecked for over a decade until the successive family planning campaigns of the 1970s and 1980s. Figure 7.6 contrasts the total fertility rate in urban and rural China from 1950 to 1987. In the early and mid-1950s, urban and rural rates were roughly similar, with a TFR of 6 or just below. They then fell together during the Great Leap famine from 1959 to 1961 and rebounded to 7 or higher in 1963. But whereas urban fertility subsided rapidly to below 5 in 1964 and below 4 in 1965, rural fertility remained above 6 until 1972, resulting in a net increase in rural population of 150 million, over four-fifths of the national population growth during this time.

Persistently high rural fertility, in other words, was largely responsible for China's population growth during the 1960s.[22] Rural fertility,

moreover, declined far more slowly than urban fertility and stalled in the late 1970s, leading the state to resort to the more coercive and extreme measures associated with the one-child campaign. Such high levels of rural fertility were historically unprecedented. So was the gap between rural and urban fertility, which accounted for almost 500 million births between 1962 and 1992, 90 percent of China's population increase during those 30 years.

Unlike the rise in population in cities or along the frontier, this massive increase in rural population seems to have been less a response to economic opportunity and more a consequence of the deterioration in familial collectivity and familial control produced by rural collectivization under People's Communes. Land reform carried out in the late 1940s and early 1950s emancipated numerous farmers from the collective constraints of the traditional Chinese family, producing a widespread upsurge in marriage and household division. As a result, the number of registered households increased from 86.21 million in 1947 to 133.85 million in 1953 (Guo Zhigang 1995, 12).[23] Household size correspondingly shrank from 5 or more in the 1930s and 1940s to 4.3 in 1953 (ibid., 11).

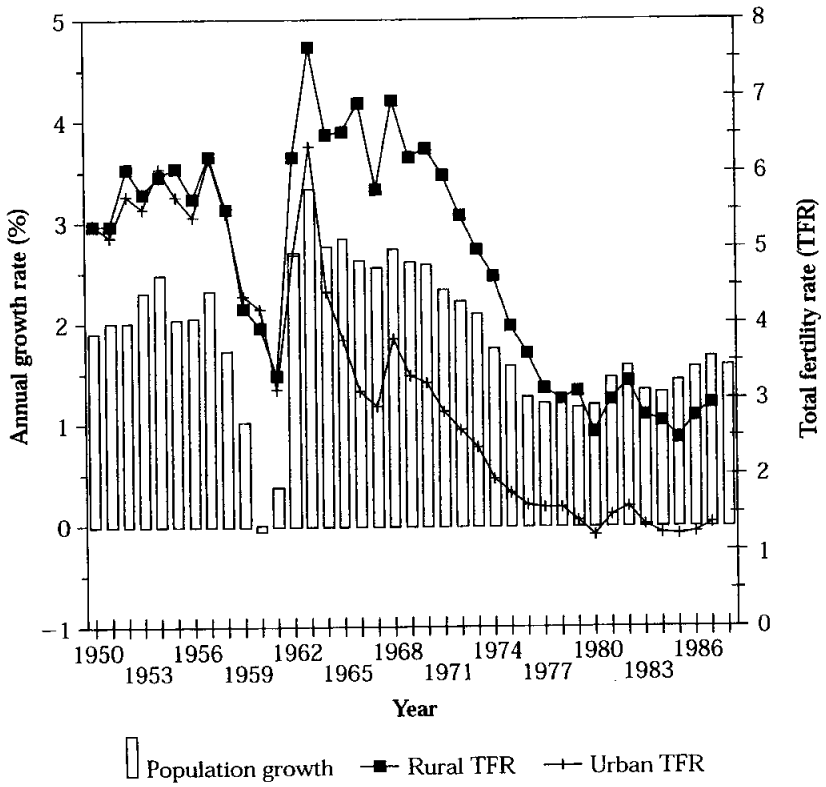


Figure 7.6. Population growth and fertility, China, 1950–1987
Source: Coale and Chen (1987), Yao and Yin (1994).

Familial authority deteriorated further. Parents no longer had legal claim over their children's property, or person (Levy 1949; C. K. Yang 1959). A new marriage law explicitly banned arranged marriages and gave individuals the right to choose their own marriage partner (Buxbaum 1978; Whyte 1990, 1993). Compensation for participation in collective production, either in urban work units (in the form of wages or salaries) or in rural communes (in the form of work points), was tied or made directly to individuals, not their families (Parish and Whyte 1978). This revolution in household structure and household control, though unintended, was also one of the most important consequences of the Chinese revolution in 1949.

Land reform was soon followed, moreover, by the planned formation of the collective farming system, culminating in the establishment of the People's Communes in 1958. Under this collective farming system, which embraced over 99 percent of the rural population and persisted until 1978, Chinese peasant families no longer had to plan their demographic behavior as they had before. Collectivization and communization made food, shelter, and employment no longer primarily a familial responsibility. In most villages, food grain was distributed on a per capita basis, which meant that an additional birth entitled the family to increased food supply and increased economic welfare.[24] Not only were families with more children rewarded by more grain distribution from the commune, but those who overdrew were not punished. The collective farming system, in other words, penalized those couples with lower fertility (Nee 1985). By providing free public education and health care, the commune and the state relieved families of a large portion of the cost of raising children. Moreover, by guaranteeing all members a right to employment, the commune system allowed peasants to reproduce without much thought of individual let alone aggregate consequences.[25] While the People's Communes may represent the apogee of rural economic col-

lectivization, especially from 1957 to 1959, they also appear to be responsible for the apogee of individual demographic maximization, producing a population explosion throughout the 1960s that was unprecedented in Chinese history.

The collapse of the traditional collective unit of population control, the family, along with the collapse of the traditional fertility disincentives resulted in the fastest population growth in China's history. Because of this unconstrained high fertility and a simultaneous drastic reduction in mortality, China's population doubled, from 500 million to 1 billion, in only three decades. It took more than a decade of unrestrained rural growth and the addition of over 150 million more people before the new collective, the state, realized fully the consequences of such a breakdown. Today the state has replaced the family as the collective unit of population control and has instituted the most ambitious, coercive, and successful birth control program in human history. Family planning has finally become socialist state planning.

Whereas the Malthusian transition requires individual decision making, the Chinese transition is a product of a renewed collective consciousness. The rapid progress of the Chinese family planning program was facilitated by a long Chinese tradition of collective calculus and control. China has consequently been able to complete the largest demographic transition within the shortest time of any large human populations. Collective demographic processes in the Chinese context have been remarkably effective both in the past and in the present at preventing overpopulation and impoverishment.

But while the shift in Chinese fertility from A in 1965 to D in 1985 resembles the classic demographic transition model, it in fact follows a fundamentally different pattern. The hallmark of the Chinese fertility decline is the renewal of absolutism and coercion in family planning, not ideational or consensual cultural change. And yet this tightening of family planning occurred at the same time as equally aggressive actions at economic reform. In contrast to the common perception that markets lead to individualistic demographic behavior, China shows the anomalous juxtaposition of heightened collectivity and rapid economic growth.