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# Why Did China's Population Grow so Quickly?

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China's one-child policy has come to be widely regarded as an effective piece of government legislation that saved the country from a Malthusian fate. The Cultural Revolution of 1966–76 was the crowning achievement of Mao Zedong, chairman of the Communist Party of China (CPC) from 1945 to 1976. This social-political movement aimed to remove all capitalistic and traditional elements from Chinese society and to enforce the Maoist orthodoxy of industrialization.

The Cultural Revolution itself functioned as a type of backlash against the failure of China's Great Leap Forward of 1958–60. Mao initiated the latter campaign to transform the agrarian society into a modernized industrial one by way of the complete collectivization of the economy. One of the defining features of the revolution was that private agriculture was prohibited and violators were persecuted as counter-revolutionaries. Lackluster economic growth and social strife during this period provided the impetus for Mao to initiate the Cultural Revolution in 1966. Although the Cultural Revolution did lead to some reforms necessary to get past the setbacks of the Great Leap Forward, it also had more than its share of shortcomings. Chief among them was the beleaguered economy's inability to adequately provide for its burgeoning population.

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The death of Mao Zedong in 1976 opened the door for more serious reforms. The family-planning policy, more commonly known as the one-child policy (ICP), was the first such reform to be carried out on a wide scale. Broadly stated, the ICP made giving birth to more than one child illegal, thus fostering a generation of only-child families. It also had the effect of reducing the birth rate and, without significant immigration into the country, the rate of population growth. Throughout the 1950s and 1960s, the Chinese population grew by about 2 percent per year. By 2007, the rate of population growth had slowed to 0.7 percent per year, roughly the same as that of the United States excluding immigration.

The rapid expansion of China's population from 1949 to the late 1970s stoked the flames of neo-Malthusian demographers. Most popular among them was Paul Ehrlich, who opened his wildly popular book *The Population Bomb* with the warning that "[t]he battle to feed all of humanity is over. In the 1970s hundreds of millions of people will starve to death in spite of any crash programs embarked upon now. At this late date nothing can prevent a substantial increase in the world death rate" ([1968] 1975, xi). Though Ehrlich was the most popular of the neo-Malthusians, he was far from alone. Throughout the 1960s and 1970s, there was widespread belief that famines would become more commonplace as limited resources were strained by the world's growing population (Gardner 2010, 130–31). Ehrlich's pessimistic forecast was proved wrong, though due mostly to the increased crop yields from the Green Revolution, not to an imminent reduction in the global population.

The ICP had the immediate effect of alleviating scarcity among the Chinese population. It was also heralded as a success story and an instrumental piece of policy that has contributed to China's rapid economic growth over the past two decades. Although there is no doubt that China did face significant problems feeding its population in the 1950s and 1960s, several questions are rarely addressed in the literature on the ICP. First, did China's population grow faster than other comparable countries, and if so, when? Second, and more importantly, why did China's population grow so quickly over this limited period?

We address these questions first by explaining the economic state of affairs in China in 1979, the year the ICP was implemented, and giving a brief overview of the policy, who it affected, and its results. Next we address how China's population growth rate compared with that other countries, arguing that the rapid population increase from 1949 to 1979 was largely the result of Maoist pro-natalist policies as well as of the Communist regime's peculiar remuneration scheme. We conclude with an explanation of why high population growth rates were uniquely damaging to China and not to other countries.

## China, 1979

In 1979, China was at the cusp of two different periods. The thirty-year-old People's Republic of China (PRC) had already suffered under various political movements,

especially Mao Zedong's twenty-seven-year rule. The core of Mao's political philosophy was the "people's war"—uniting the majority and crowding out the minority—which was promoted in China through several propaganda campaigns.<sup>1</sup> This strategy was prevalent throughout Mao's political career. By the end of 1970s, the majority of Chinese citizens were in an unconscious state of support for such policies.

In December 1978, the Third Plenary Session of the CPC's Eleventh Central Committee was held in Beijing. It is recognized as the watershed moment in the CPC's guiding ideology—that point when the focus was converted from class struggle to economic development. The conference has also been recognized as an important symbol of China's reforms and the opening up of its economy. In short, the Third Plenary represented the shift from the regime of Chairman Mao to the hesitantly pro-market regime of Deng Xiaoping.<sup>2</sup> Shenzhen, a modern city adjacent to Hong Kong, is a typical representative case of China's reforms and opening up to the outside world during this period. In 1979, this city was a small town, but because of its geographical location it became a center for the smuggling of goods from free-market-oriented Hong Kong into mainland China (and for the smuggling of Chinese citizens into Hong Kong). It was Hong Kong's apparent prosperity that prompted Deng Xiaoping to pursue China's subsequent pro-market reforms (Hutchings 2000, 168). In this way, Hong Kong served as not only a window for China to look at the advances and successes of the outside world but also as a mirror for the country's leadership to get a glimpse of its own political and economic failings.

Grassroots support for political change during the more recent Communist period, inaugurated in 1949, stemmed from unlikely sources. In 1978, eighteen farmers in the village of Xiaogang in the Anhui Province of eastern Middle China pioneered the "household contract responsibility system," whereby remuneration was linked to output, not to the number of workers, and local managers (not the state) were held responsible for the operation's profits and losses (Watson 1983; Krusekopf 2002). This system functioned by way of oath, upheld even in cases of death and under the responsibility not of individuals but of the whole family. This new type of contract had three important features. First, farms were divided between subsequent generations of families, not allocated by the state, as in the existing system. Second, no longer could participants ask for resources (e.g., income, food, shelter, and so on) from the state. Finally, if any supervisory officer from the local government was debilitated, the other farmers would ensure the support of his dependents until they reached eighteen years of age. This precedent set in motion a rural revolution, with Deng Xiaoping affirming the practice in 1980, despite its many critics, and the CPC began promoting it by 1982.

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1. An example of such propaganda emblematic of the time was the first successful satellite launch of the Red East 1 in April 1970. The satellite transmitted a song from space to Earth, with typical pro-Mao lyrics: "The sun has risen / The East is Red / From China Mao Zedong emerges."

2. Note that Deng Xiaoping was never the *de jure* leader of the CPC but held *de facto* power over politics from 1978 to 1989 and was highly influential until his death in 1997.

Similar reforms in other cultural, social, and economic fields followed shortly thereafter. The coupon system, which allocated food, clothing, and other consumers' goods, was gradually replaced by the "double-track" price system starting in 1984. This new system allowed for goods produced in excess of the needs of the rationing system to be freely traded on the market, which resulted in two series of prices. In general, because of scarcity, the prices in the market were higher than those in the planned system. The Price Law was passed in December 1997 and implemented in May 1998, whereby central and local governments were charged with developing their own systems for dealing with changing prices. In 2002, China finally established an initial "socialist-market economic system" with more freely varying prices (Chen 2009).

In short, the year 1979 represented the year that China sowed the seeds of reform to move from its Communist economic system to a more market-based alternative. The economic and political systems, styled as they were by socialist ideology, viewed the country's large population as a burden rather than as a resource (as it had been under Mao Zedong). Despite Deng Xiaoping's pro-market leanings, he felt that the growing population was a chief problem in need of a solution in order for China to be welcomed onto the global stage: "In order for China to achieve the four modernizations, it must overcome at least two important roadblocks. The first one is weak economic standing. The second one is a large population with limited arable land. Now the population is higher than 900 million, 80 percent of which are farmers. The coin of a large population has two sides. Under the condition of insufficient development, all the problems related to food, education, and employment are severe ones" (Deng [1979] 1993, 163–64). This pessimism concerning the population's strain on resources echoed the similar neo-Malthusian fears of the time. It also created an apparent "need" for further reforms to limit the growth of what was once viewed as China's most important resource: its population.

## The One-Child Policy

The 1CP was implemented in 1979 to alleviate the social, economic, and environmental problems plaguing the PRC.<sup>3</sup> It has long been heralded as an example of a good government policy that corrects for a market failure—in this case, citizens' desire to produce more children than the market can provide for.<sup>4</sup> The rapid population increase over the preceding decades strained some of China's most important resources. These problems were solved only superficially and on a piecemeal basis, with little attention to the underlying causes. For example, health-care availability became so scarce that by 1965 Mao introduced the concept of "foot doctors" to

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3. This section draws from Howden and Zhou 2014.

4. Much of China's recent success is often erroneously credited to interventionist policies, when in fact its free-market reforms have played a much more significant role (Schoolland 2012).

alleviate this scarcity. Farmers received basic medical training and were sent to the rural villages that lacked professional doctors (Hsu 1974). This practice was continued until 1981, when it started to become obvious that the ICP would reduce the pressure on overcrowded hospitals. The ICP was drafted not only to slow the rate of population growth but also ultimately to control the size of the total population and consequently to limit the strains on the nation's scarce resources.

The ICP allows most couples of Han race to give birth to only one child.<sup>5</sup> (According to the census in 2010, Han families account for 91.5 percent of the population of mainland China.) Births are controlled not only directly through the policy but also indirectly by laws pertaining to marriage. The legal age to marry is set at twenty-two for males and twenty for females (1980 Marriage Law of the PRC, chap. 2, clause 6).

In response to fears concerning future population declines, the ICP has been recently relaxed in some instances—for example, when both the husband and the wife are an only child, in which case they are allowed to give birth to two children. By 2011, all thirty-one provinces and municipalities of mainland China had relaxed the policy. More recently, in November 2013, China announced a further loosening of the policy, this time allowing two children if only one parent is an only child.

Violations of the ICP are met with pecuniary penalties. The birth of a second child (if not permitted) results in a monetary fine, which generally ranges from three to six times each parent's annual income, though the exact amount is determined by the local government (2001 Law of Population and Family Planning of the PRC, chap. 6, clauses 41–42).<sup>6</sup> Violations also provoke political ire, affecting both those directly involved and their extended family. These political repercussions include disadvantages in attaining politically appointed positions as well as discrimination when dealing with administrative formalities. Officials who ignore infractions also face punishments. In some cases, infractions have been dealt with through forced abortion, as was the widely publicized case of a young mother in Hunan province who was forced to abort her seven-month-old fetus by injection of an abortifacient (Li 2013).

The ICP has had two main effects on the Chinese population. The first and most obvious is that it is smaller than would otherwise be the case, and that its growth rate is slower. Low estimates by demographers place the number of avoided births at 100 to 200 million (Wang and Cai 2010), but some estimates go as high as 400 million (Lü 2013; Guo 2014). The latter figure represents roughly 30 percent of the current population.

5. Ethnic minorities, who live mostly along the borders of the northern, western, and southern parts of the country, are dealt with through local policies administered at the provincial level.

6. The exact fine depends on the parents' region of residence, income, and number of children already born.

The second effect is the sex imbalance. The natural sex ratio of males to females at birth is 105 to 100, which balances out as children age because males have higher mortality rates during their early years. According to the PRC National Bureau of Statistics, the ratio currently stands at 118 males for every 100 females, leaving many young Chinese men unable to find a partner as they enter their marriageable years. As of 2010, this imbalanced sex ratio had created a surplus of 40 million males unable to find a Chinese woman of the appropriate age to marry (Poston, Conde, and DeSalvo 2011).<sup>7</sup>

Although not formally implemented until 1979, the ICP was conceived as early as the 1950s. The famous Chinese demographer and economist Ma Yinchu proposed population-control measures such as later marriages and the widespread availability of contraception. In his report entitled *New Population Theory*, Ma outlined his case that China's population was growing too quickly relative to the rate of capital accumulation and predicted that the quality of life in China could not be maintained in the future (1957, 297–317). Although his policy recommendations centered mainly on capital accumulation through raw-material production, education and scientific research initiatives, and limited consumption, he also noted that capital would accumulate faster on a per capita basis if the rate of population growth was slowed.

Although the ICP is not without its opponents both inside and outside of China, Chinese citizens generally view it favorably. A Pew Research Center survey taken in 2008 found that 76 percent of the country supports it (Pew Research 2008).

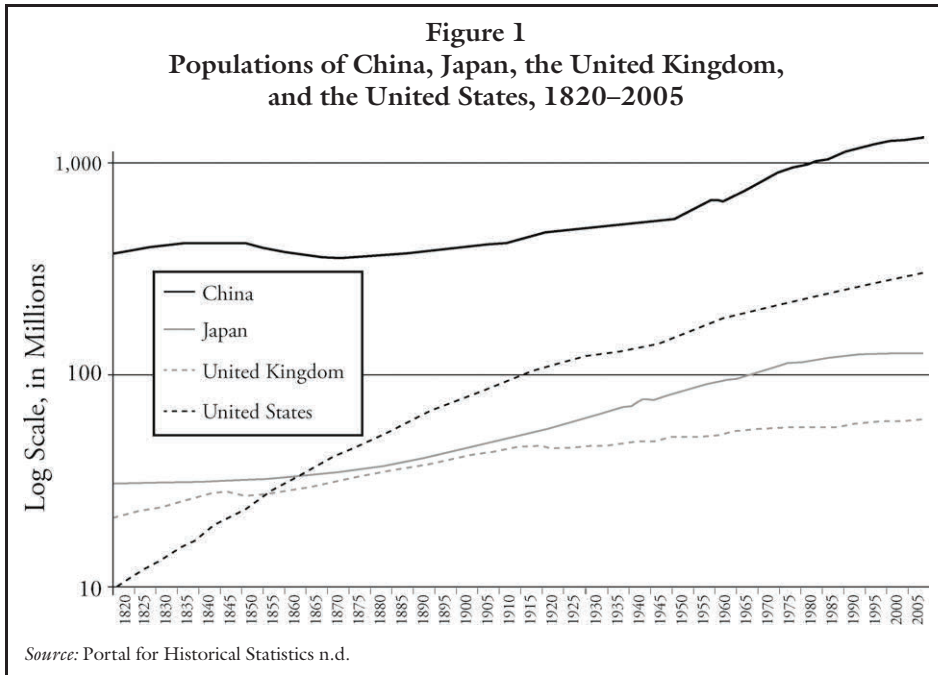
## A Retrospective Look at Population Growth

One prevailing view of China's population growth is that it has always been high. This view may stem from the fact that China is by far the world's most populous country, with more than 1.35 billion citizens. In fact, China has long held this title, and even as far back as 1820 it could boast of containing more than 380 million citizens, which was more than six times the combined populations of Japan, the United Kingdom, and the United States at that time.<sup>8</sup> More than one in three people alive in 1820 were Chinese. By contrast, China's population is currently *only* around three times as large as those three countries, and only one in five humans counts as Chinese. China's declining share of the global population points to a slowing rate of population growth relative to other countries. In fact, the average rate of Chinese population growth was only roughly half as much over the past

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7. There is also evidence that the preference for male heirs is the result of economic liberalization because "Chinese mothers with higher levels of education are substantially more likely to select sons than less educated mothers" (Almond, Li, and Zhang 2013).

8. We focus on these countries because of the stability of their borders over this time period and because of the availability and quality of their demographic statistics.



two hundred years as it was in such developed countries as Japan, the United Kingdom, and the United States.

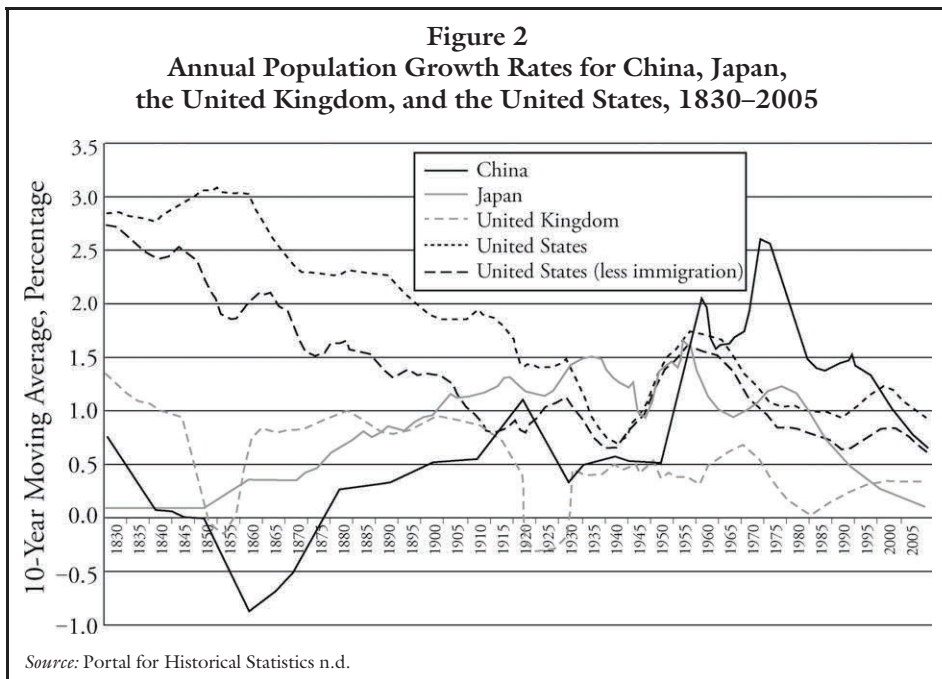
One explanation for this relatively sluggish rate of population growth over China's recent history can be seen in figure 1. China's population continually declined from roughly 1845 to 1870, ultimately dropping by 13 percent. The population decline during this period coincides with the Taiping Heavenly Kingdom (1851–64). The rebellion that ushered in this new kingdom covered almost half the main provinces of eastern China and resulted in the deaths of millions of people. Remnants of this kingdom persisted until 1872 and were accompanied by some small rebellions, explaining the prolonged drop in population until 1870. In contrast, despite short-term setbacks in Japan and the United Kingdom during the world wars, the populations of the comparison group have continually grown since the mid-nineteenth century. Although the rapid rates of population growth in the United States and the United Kingdom over the nineteenth century can be attributed to the Industrial Revolution (Boserup 1981), it is difficult to extrapolate the same reasoning to Japan or China. Japan's own industrial revolution did not start until the 1870s during the Meiji period. Any industrialization that may have bolstered China's population growth did not occur until the mid-twentieth century, whether because of strong political regimes hesitant to allow for economic expansion or a culture resistant to change (Landes 1999, 38–39; Weber [1930] 2009).<sup>9</sup> In either case, China's population

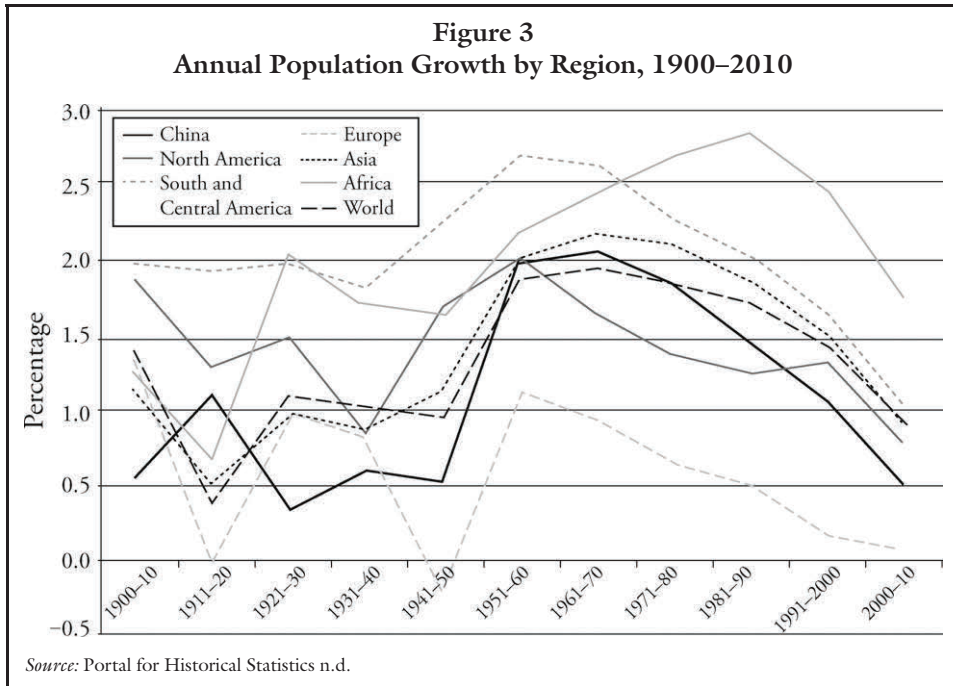
9. China experienced a small but short-lived bout of industrialization from 1861 to 1895 called the "Westernization movement," but the movement had no impact on population.

growth did not coincide historically with that of other large countries, making the phenomenon relatively recent.

Despite always having a large population, China has been comparable with the United States in terms of its growth throughout the twentieth century. During the nineteenth century and the first half of the twentieth century (ignoring the period during which continuous civil wars caused a severe setback to China's population), Chinese population growth was no higher than the growth in its neighbor Japan or the growth in European nations such as the United Kingdom. In fact, prior to the twentieth century, the United States was the sole country of the four in the comparison group that had a noticeably higher than global average population growth rate. Nor was this growth mostly a product of immigration because even the growth of the existing U.S. population was unusually strong (relative to its peer group) up until the early twentieth century (figure 2).

If there is an anomalous period for China's population growth, it starts in 1949 and proceeds until the late 1970s (with a brief dip during the Great Chinese Famine of 1959–61). Following World War II, China joined both Japan and the United States (among other countries, but notably not the United Kingdom) in commencing a baby boom of sorts. China's population growth was not unusually strong by American or Japanese standards until the mid-1960s. At this point, when the three other countries started to see a decrease in their population growth trends, growth in China remained robust and climaxed in 1971 at 2.6 percent.





Along with other developing regions, the rate of population growth in China remained high relative to the world from 1950 to 1980, though only marginally so (figure 3). During that three-decade period, the world population increased by 1.9 percent annually, compared with 2.0 percent for China. In this sense, Chinese population growth over the period is much less remarkable than that of Asia in general (2.1 percent), Africa (2.5 percent), or South and Central America (2.5 percent). Although this general increase in population growth is variously attributed to improved nutrition (Deevey 1960), lower infant mortality rates (e.g., through improved sanitation and childhood immunization (McKeown 1988)), improved maternal health (Albanesi and Olivetti 2014), or general real-wage growth (Greenwood, Seshadri, and Vandenbroucke 2005)), China differed from other developing countries for two reasons. First, its population growth during the first half of the twentieth century was among the lowest in the developing world.<sup>10</sup> Indeed, from figure 3 we can see that China's rate of population growth from 1900 to 1950 was broadly similar to that of the world in general. What set China apart were the rapid surge during the 1950s and the subsequent high level of population growth until the enactment of the ICP in 1979. Although other areas of both the developing

10. This low population growth is due in part to the approximately 2 million deaths suffered during the Chinese Civil War of 1928–36 and the 15–20 million casualties during the Second Sino-Japanese War of 1937–45, though the absence of these untimely deaths over the period would still only allow for an annual rate of population growth of less than 1 percent (an increase of only 0.09 percentage points over the actual figure).

**Table 1**  
**Average Annual Population Growth Rates by Decade (Percentage)**

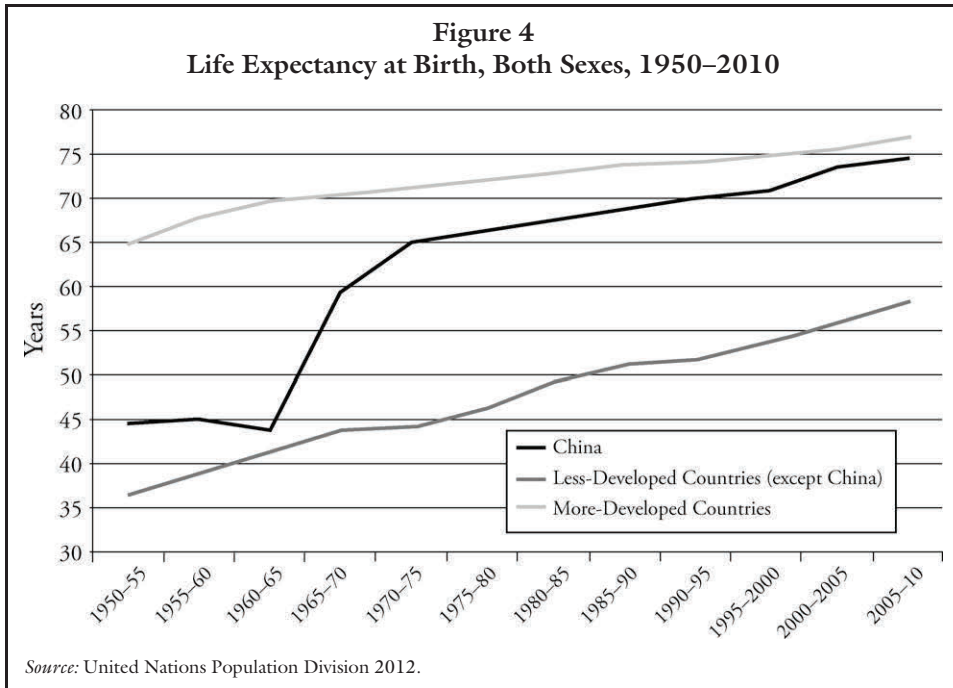
	United Kingdom	United States	China	Japan	World
1900–10	0.9	2.0	0.6	1.2	1.0
1911–20	0.4	1.4	1.1	1.2	0.6
1921–30	–0.2	1.5	0.4	1.4	1.0
1931–40	0.5	0.7	0.6	1.3	1.1
1941–50	0.4	1.4	0.5	1.4	1.0
1951–60	0.4	1.7	2.0	1.2	1.9
1961–70	0.6	1.3	2.1	1.0	1.9
1971–80	0.1	1.1	1.8	1.1	1.9
1981–90	0.2	0.9	1.5	0.6	1.7
1991–2000	0.3	1.2	1.1	0.3	1.4
<b>Average</b>	<b>0.4</b>	<b>1.3</b>	<b>1.2</b>	<b>1.1</b>	<b>1.4</b>

*Source:* Portal for Historical Statistics n.d.

world and the developed world realized their own baby booms during the postwar period, none experienced as rapid an ascent as China's.

Accounting for the duration of its baby boom, China's average annual population growth rate of 1.97 percent per year from 1950 to 1979 was just barely greater than the growth rate for the world as a whole (table 1). It is also not far off the growth rate generated by the postwar baby boom in the United States, which averaged 1.4 percent per year over the same period. Looking beyond this narrow thirty-year period, China generated levels of population growth just barely greater than Japan throughout the twentieth century and even lagged behind the United States and the world as a whole in this regard. Thus, China did not have an abnormally high rate of population growth except for the thirty-year period following the accession of Mao Zedong as CPC chairman in 1949 until the implementation of the 1CP in 1979. Considering that the rapid growth of China's population (though the word *rapid* is not really accurate in light of the statistics) was the justification for the 1CP, it is useful to identify the reasons why this "rapid" growth took place.

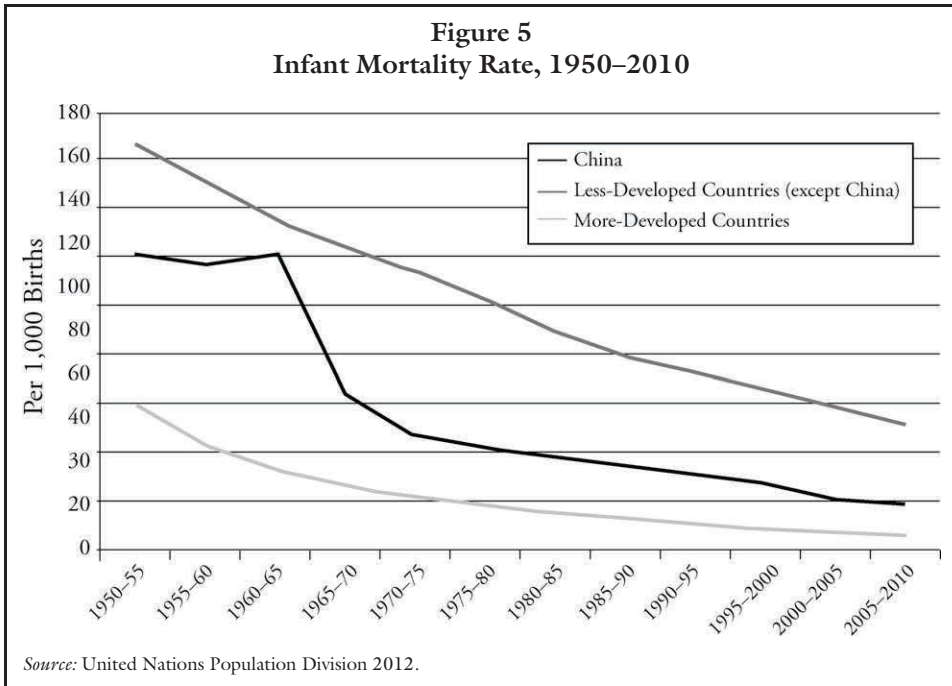
One explanation of the rising population might be increasing life expectancies. Although life spans have increased unabatedly through the less and more developed regions of the world since 1950 (figure 4), in China this has been the case only since the early 1960s. This sudden increase in life expectancy can be said to have contributed to the spike in the Chinese population growth rate during the same time period (roughly 1962–72). However, for the purposes of this article, we are concerned chiefly with the initial and most rapid period of population increase,



which took place from 1949 to 1962 (see figure 2). Because Chinese life expectancy did not begin to increase until the very end of this period and was actually flat or declining throughout much of it, we doubt that this factor was responsible for the initial population surge.

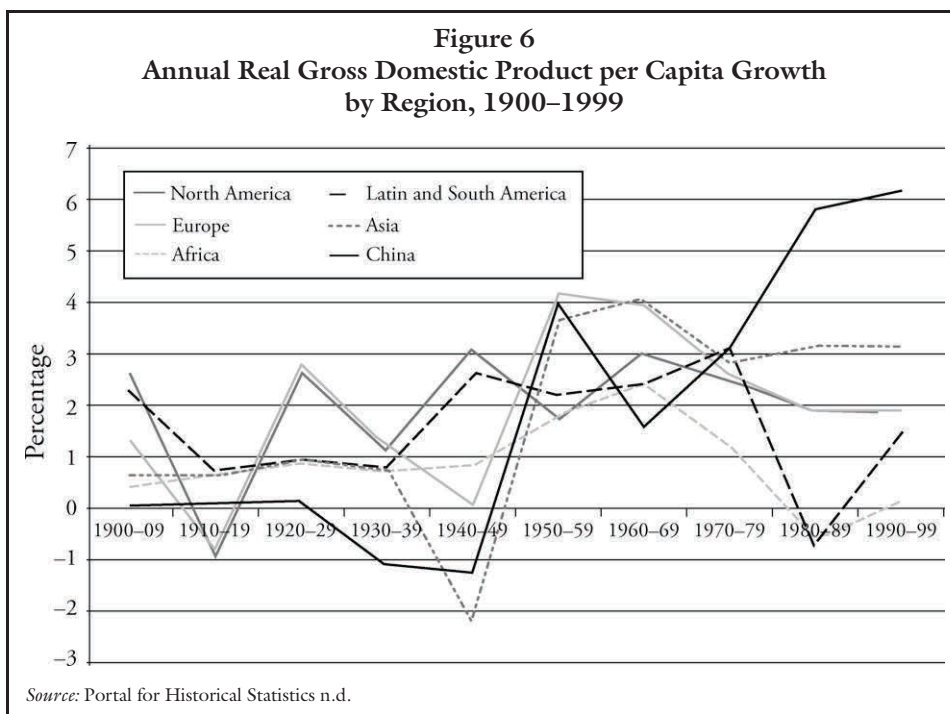
Alternatively, one might point to improvements in public health and the emphasis on increasing medical service availability during the Great Leap Forward (Lampton 1974). General improvements to health care did have beneficial results on population growth (such as decreases in infant mortality, as in figure 5), but these benefits accrued mainly during the post-1958 period. Although the rest of the world experienced earlier declines in infant mortality, the CPC was a laggard in adopting some general health-care policies that would reduce the risks in childbirth and did so in a piecemeal manner relative to other countries (Lampton 1974). China's initial population surge commenced in 1949, yet infant mortality did not begin to decrease significantly until the late 1960s. So, as with increases to life expectancy, the decline in infant mortality contributed to the second population burst from 1962 to 1972 but cannot be said to have had an impact on the initial surge from 1949 to 1960.

Finally, one might point to increases in real economic growth as being a driver of Chinese population growth in the period examined. Although standard growth models place increases in population as one of the main drivers of real economic growth in both theory and practice (Mankiw, Romer, and Weil 1992), one alternative view sees wage growth as contributing to the birth rate and ultimately



to the total population (Greenwood, Seshadri, and Vandenbroucke 2005). Chinese economic growth was strong through the early 1950s, though in general it lagged behind the majority of the world for most of the twentieth century (figure 6). Even during China's short burst of economic success in the 1950s, real growth was no higher there than in the rest of Asia or Europe. Although both of the latter regions also experienced population surges of sorts during the immediate postwar period (figure 3), Europe's surge was from an admittedly low level considering the military and civilian casualties of World War II. At any rate, the sluggish rate of economic growth in China during the 1960s cannot explain the maintained population surge the way that the economic growth of the 1950s was the driver of that decade's population growth.

Because general economic conditions were not exactly positive throughout the whole 1949–79 period, we can withdraw the hypothesis that population growth was a natural response to the economy's increased carrying capacity. And because immigration into China was minimal during the twentieth century, we can remove this alternative as a source of population growth. These eliminations thus require that we focus narrowly on the total fertility rate. China's average fertility rate increased continually until 1965, when it peaked at 6.2 births per woman before declining swiftly into the late 1970s. By contrast, the Organization for Economic Cooperation and Development countries were already on a declining path from the late 1950s, and data from the United Nations (n.d.) show that the average fertility rate for the least-developed countries of the world hovered around a high plateau of 6.5 until the early 1970s.



Again China is unique by developing-country standards for having a somewhat lower fertility rate, which started to normalize with the rest of the world nearly ten years before its peer group. What is also unique about China's fertility rate (which unlike general health measures *does* correlate well with the population surge from 1949 to 1979) is its sudden rise in the early 1950s and swift decline through to 1979. Thus, we can conclude that it was the rise in births per woman that served as the primary driver of China's population growth. As we will see, two important pieces of legislation motivated Chinese citizens to have children as a method to escape their subsistence lives.

### Mao's Pro-natalist Policies

Mao was a capricious leader, so his population "policies" were in constant flux. The official description of the population theory espoused by the PRC prior to 1979 was later referred to as erroneous and as due mainly to a Maoist recklessness accompanied by fantasies inconsistent with the country's social situation (People's Government 1980). On December 18, 1962, the CPC's Central Committee and the State Council issued a document entitled *Instructions on Promoting Family Planning Seriously*.<sup>11</sup>

11. This document is available in Chinese from the CPC database of important news and documents at <http://cpc.people.com.cn/GB/64184/64186/66669/4493533.html>.

It stressed that party committees and local governments should seriously strengthen their involvement in family-planning issues in both rural areas and densely populated cities. Although there were few explicit policies, we can interpret Mao's implicit policies as a factor that influenced population growth throughout the period of his leadership.

In the early 1950s, Mao and other key leaders began to support some form of a family-planning policy. At national conferences, Ma Yinchu gave several lectures and reports in favor of family planning (Wang 2008). Mao's attitude at the time was mostly ambivalent on the topic, and as a result such ideas never came to be implemented as policy. However, by late 1957 the Great Leap Forward brought the country to the early stages of the largest social reform ever undertaken. Mao did not know whether the population should be higher or lower, but overstatements concerning food production during this period altered his thoughts to be more favorable toward population growth (Wang 2008). As a result, he affirmed his support for a growing population.

When Mao decided to support the promotion of population growth, his ministers were free to draft policies to implement this viewpoint. On July 9, 1957, he met several important public figures from outside of the party to hear their opinions about the forthcoming Great Leap Forward. In that meeting, Shao Lizi, himself a supporter of family-planning policies, suggested to Mao that he consider controlling the population. Mao's answer was that "the population problem is not serious yet, and would not be until the population reached 800 million" (qtd. in Wang 2008). As a blind proponent of social engineering and ever optimistic about the CPC's ability to overcome trials, Mao even went so far as to state that "under the leadership of the Communist Party, as long as there are more people, miracles will be created!" (qtd. in Wang 2008). Although the extent of Mao's unilateral control over the country during this period is debated, there is no doubt that his authority was unrivalled and unchallenged. On issues in which he was interested, "he exerted the dominant influence. He always got his way if he so chose, and his words had to be obeyed" (Chang 2001, 6–7; see also Teiwes and Sun 1999). In effect, Mao's beliefs were translated into policies applicable to the entire country.

In the following years, Mao openly encouraged a larger population, blinded not only by the overstatements of food production and the unrealistic enthusiasm generated during the Great Leap Forward but also in response to new threats from China's former close ally, the Soviet Union. After the death of Joseph Stalin in 1953, relations between Nikita Khrushchev and Mao deteriorated, and formal Sino-Soviet relations began to decline. Khrushchev's criticisms of the personality cult surrounding Stalin and some other diplomatic conflicts between the two countries made Mao wary of his neighbor. As one Chinese saying goes, two tigers cannot live on the same mountain, and this was the feeling among CPC officials regarding the two socialist countries bordering each other in Northeast Eurasia. During his

second and final visit to Moscow in 1957, Mao Zedong gloated of being able to sustainably lose 300 million citizens (almost half the country's population) in a nuclear war, such was his faith in the strength of the Chinese population to survive a prolonged conflict (Shen 2011). His belief in the "strength in numbers" approach as deterrence to international conflicts contributed to many statements during the Great Leap Forward that in essence conveyed the idea that "the more people, the stronger we are" (Mao 1958). A personality cult surrounding Chairman Mao existed in China at that time, and the leader's opinion was treated as the supreme command. One result of this treatment may have been a preference shift among the general population to satisfy their dear leader's population whims through higher birth rates.

In addition to the increased preference for children based on a desire to please Mao Zedong, improved medical and sanitary conditions also contributed to the baby boom before 1979. The spread of vaccinations greatly reduced infant mortality. Between the outbreak of the First Opium War in 1839 until the end of the Korean War in 1953, China had suffered from a nearly uninterrupted century of social strife that had depressed population growth. The prolonged peace soon after the 1949 revolution produced the first extended period with no fear of wartime death. Like other postwar developing countries, China tread a common path, high birth rates coupled with low death rates, to create a rapid rate of natural population growth.

Notwithstanding a brief decline in the birth rate during the Great Leap Forward and Great Chinese Famine of 1959–61 (caused mainly by mass starvation and related diseases such as dysentery), from 1949 to 1991 the country's birth rate remained nearly continuously higher than 2 percent per year. Coupled with the declining death rate and ignoring the spike in deaths during the Great Chinese Famine, the natural rate of population increase (i.e., excluding immigration, which in any case was quite low) averaged more than 1.5 percent per year from 1956 until the early 1990s.

## **Children as a Response to the Communist Remuneration System**

Decades of socialism plunged much of the country into destitution. The *hukou* (Household Registration) system and the People's Commune system not only removed private property and initiative from agricultural production but also confined farmers to allocated lands from which migration was restricted. Technological backwardness, institutional limitations, and unsustainable stewardship of its publicly owned natural resources (especially arable lands) left the country with a scarce amount of general resources, in particular food, to sustain its growing population (Howden and Zhou 2014). This problem was especially acute when poor monetary management by the People's Bank of China reduced the renminbi's purchasing

power through high levels of inflation and thus hindered the country's ability to import resources (Chang 2001, 3–4).<sup>12</sup>

After 1956, all lands were publically owned by either the state or local governments. The farmers of a village were divided into production teams, and how much food they could earn was decided by a point system (each hour worked earned ten points for a man, eight for a woman, and six for a child). How many resources (e.g., food) a family received depended on the points it earned through this system. Notably, this hourly scale meant that remuneration was not linked to production or contribution to output but rather to an individual's availability to work.<sup>13</sup> Lacking an incentive for workers not only to show up for work but also to work hard, the system resulted in the low productivity that eventually led to its own demise. By 1978, this problem had compounded until land reforms became necessary. Starting that year, farmers could sign long-term contracts with the local government to farm the land for themselves and market the produce.<sup>14</sup>

Having many children has been part of Chinese culture for thousands of years. This fecund aspect of Chinese society is often given as one reason why China's population was growing at such an unsustainable rate in the 1949–79 period. A central theme in Ma Yinchu's report *New Population Theory* (1957) was that traditional Chinese desires (such as the desire to bear many children) still existed in modern China and that they were reinforced by many older aphorisms.<sup>15</sup> Although it is undoubtedly true that large families have been an historical fact in China, this phenomenon is not uniquely Chinese. European couples in the nineteenth century averaged 4.5 children, and most common estimates in the United States put the figure around 5.5 children during the same period (Münz 2007; Haines 2008). Large families were pursued globally throughout most of history due to two factors,

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12. Before 1978, there was no substantial consumer-goods market in China, and we hesitate in making assertions concerning price inflation during the early years of the Communist regime. The quota system that distributed goods among consumers was hampered by frequent, if not perennial, shortages in the absence of a price system to aid in economic calculation. However, some statistics point to high levels of imputed price inflation from the 1950s through the 1970s, which contributed to the difficulties the central government had in supplying adequate rations. The PRC National Bureau of Statistics officially estimates that prices rose by 50 percent between 1951 and 1961 (Howden and Zhou 2014, 367 n. 6).

13. There *were* distinctions in wages based on the worker's skill level (Schurmann 1966, 96, 199). A dualism in the wage system commonly existed in which state-owned factory and service workers earned higher wages than peasants and workers in "satellite factories" outside of the main administrative jurisdictions (Schurmann 1966, 389). In some cases, remuneration was also linked to the total output of the collective though not of the individual.

14. More correctly, these contracts were with the so-called collective because all land in rural areas of the country were de jure "owned" by the village itself, and its use was de facto controlled by the local government.

15. For example, there are three types of unfilial conduct, the worst of which is to have no children (and, hence, no descendants). This guideline comes from the ancient Chinese philosopher and second most famous Confucian, Mencius, around 372–289 B.C.

neither of which is unique to China. First, high rates of infant mortality gave rise to a preference for many children to ensure that a sufficient number lived to adulthood, and, second, children were needed to care for elderly family members. Several additional factors created by the CPC interacted with this historical preference to increase the demand for children among Chinese citizens.

First, under the socialist system parents had little need to calculate the marginal cost of raising an additional child because all resources were provided by the state. In effect, parents responded to this logic by having more children than was sustainable given the country's resources. It was unnecessary from a narrow point of view for prospective parents to perform the calculus of whether their productive capacity could sustainably support a child. Although this calculation failure posed no problem for any one individual (or couple) within the socialist economic system where each was provided for according to his needs, for the system as a whole it bred great instabilities when the increased demand for children was not met by a corresponding increase in production to sustain the growing population.<sup>16</sup> As a result, parents tended to have more children than they could collectively support through their productive services.

The *hukou* system rules that children of Chinese parents will inherit their social rank, whether "citizen" or "farmer." Although all citizens now have more flexibility in job selection, only those registered as farmers are able to work arable lands. This system was enforced very strictly before the start of the reforms following Mao's death. Chinese who were identified as "citizens" could inherit their parents' jobs in factories or in other nonagricultural sectors through a process that functioned as a hereditary custom. Moreover, citizens had more privileges under the *hukou* system, including employment in desirable jobs in cities and remuneration based on their skill set and job profile. Farmers, in contrast, were fixed in their villages and were remunerated for their labor according to the system of "working points." Under this system, having more children meant not only more laborers for the country (after a requisite time lag) but also more points (and remuneration) for the family immediately.

The socialist system in China generally resulted in widespread shortages and inefficient production methods, but one good was produced in relative abundance: children. Shortages during the Great Leap Forward coupled with the remuneration system of the socialist economic system left people with only one option to increase their availability of basic resources. Each additional child born would guarantee the family unit a greater distribution of resources. The sustainability of the system promoting children to increase remuneration is not possible on a macroeconomic scale because each additional child reduces

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16. To the extent that pregnant women and families with small children have lower productivity than would otherwise be the case, total production would have been reduced further because of the increased birth rate.

the amount of resources available to all other Chinese citizens and will not contribute resources until a future date. However, by not having additional children, a family would see its standard of living reduced by the drain on resources brought about by other children, whereas having more children of its own would reverse any such reduction. As a result, Chinese families were motivated to have as many children as possible lest their standard of living continually decline due to the increased number of children in other families, which would drain the available resources.

This reasoning makes sense as a one-time prisoner's dilemma, but some type of institution (formal or informal) should have arisen over the thirty years of population growth to detect the overpopulation problem.<sup>17</sup> This is a reasonable theoretical claim to make, yet it is questionable whether any one individual could avoid falling prey to the dilemma given that knowledge of the resource constraint was known only to the CPC leaders in Beijing (and possibly not even to them—Mao's support of population growth was, after all, spurred by false reports of plentiful resources). Owing to the collective nature of the Chinese economy, individuals had little knowledge of the connection between consumption and production. Because the pooled resources were centrally allocated among the country's citizens, any deficiency in production without a corresponding decline in rations would be seen as only a local and not an economy-wide phenomenon. In short, the resource constraint would be unknown to all but those near the top of the rationing system. Alternatively, it is possible that Chinese citizens *did* learn of the collective folly of their reasoning to have more children, though by this time (e.g., the early 1960s) improvements to public health and the general provision of medical services had occurred and contributed to population growth through increased life expectancies and lower infant mortality rates (as discussed earlier).

Thus, not only was the cost-benefit calculus of having children skewed by the socialist system (the benefits of having children were privatized among the family, yet the costs were paid for by the state), but widespread shortages also motivated Chinese parents to maximize the number of children they had as a way to maintain their quality of life. Coupled with the proclivity to have children to satisfy the desires of the widely idolized Chairman Mao and the historic tradition to have many children, this incentive resulted in a short-term burst in the birth rate. Advances in medical technology shortly thereafter reduced the death rate. As a consequence, the rate of population growth rose rapidly and remained at a high level until exogenously reduced by the ICP in 1979.<sup>18</sup>

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17. We thank an astute referee for raising this point.

18. In this way, China's ICP is a case study in Ludwig von Mises's argument that interventions beget further interventions ([1929] 1996, 25). When parents were motivated to have an unsustainable number of children due to state controls over the labor market and worker remuneration, the CPC was "forced" to enact an additional policy that would prevent such motivated parents from having more children than the country could support.

## Conclusion

China's one-child policy is among the most famous policies enacted in the wake of the country's Cultural Revolution. It is also among the most positively viewed policies, drafted to save the country from a neo-Malthusian fate. By keeping China's population from growing larger than would otherwise be the case, the ICP may have contributed to the boom that the country is currently experiencing.<sup>19</sup> Despite the ICP's popularity, one question pertaining to it is rarely asked: Why did China's population grow so quickly? This paper has achieved two goals in answering this question.

First, with the exception of the period from 1949 to the late 1970s, China's population grew no more quickly than that of other comparable countries, such as Japan and the United States (excluding immigration). Over the whole of the twentieth century, China's population grew only a little more quickly than Japan's (1.2 percent versus 1.1 percent per year) and more slowly than the U.S. and world averages of 1.3 percent and 1.4 percent. Nor is this apparent average population growth a result of low birth rates since the ICP's implementation in 1979. Even during the most fecund years of China's baby boom lasting from 1949 to 1980, the average yearly population growth rate of 1.97 percent was only a little greater than the global average of 1.90 percent. In short, China's prodigious rate of population growth widely cited as the reason the ICP was "necessary" is more apparent than real.

It is true, however, that China's population growth rate did spike suddenly in 1949 before leveling off in the late 1970s due to causes such as educational advancements and income growth. The second goal of this paper has been to explain why the country's population growth rate increased so quickly in the period examined. Advances in public health that lengthened life expectancies and reduced infant mortality came later on, mostly after the end of the Great Leap Forward in 1961, and thus cannot explain the early surge in population growth from 1949 to 1959. Furthermore, although part of the later population surge from 1962 to 1979 can be attributed to better medical care, this factor alone cannot explain the case of China because life expectancies were increasing across the globe, but China alone witnessed the rapid increase of population growth that it did.

The personality cult of Mao during his rule enticed millions of Chinese citizens to obey his faintest command. Mao's belief that a large population was necessary to secure the country's borders and to aid in the CPC's industrialization policy whipped up a fervor to have more children to satisfy the leader. Although this factor explains the ideological preference for having more children, the fact that so many parents actually did follow through by giving birth to larger families stems directly from another of Mao's policies.

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19. Instead of increasing output, as in any standard neoclassical growth model, Chinese population growth created such a binding resource constraint that it has been estimated that every 1 percent decrease in the population growth rate after 1979 has been associated with an increase in GDP by 1.2 percent (Fang and Leong 2014).

The *hukou* system nationalized all the country's lands and remunerated workers for their labor hours instead of for their output. At the same time, the scarcity that plagued the country after the Great Leap Forward left parents with few options to provide a better life for their families. Paradoxically perhaps, one way to increase family earnings was to have additional children. Although children were remunerated less than adults, they still provided an important source of resources for their family. Chinese parents tried to escape poverty by having children as a source of income. Unfortunately, although such a policy might work on an individual level, for the economy as a whole it meant diverting more scarce resources to citizens (the newborn children) who would not be capable of producing until sometime in the future. Scarcity worsened, and because the Communist government was unwilling to introduce significant market-oriented reforms, the only alleviation would come from limiting the number of new children entering the economic system each year. Thus, the ICP was born.

Not only was China's average population growth rate not higher than the rate of the rest of the world during the whole of the twentieth century, but its baby boom also fits within a remarkably compact twenty-five-year period. The start of this period also coincides with the Cultural Revolution, and the rapid population growth starting in 1949 occurred because parents bore children to receive additional resources from the government in a bid to alleviate the individual scarcity foisted on them by the Communist regime.

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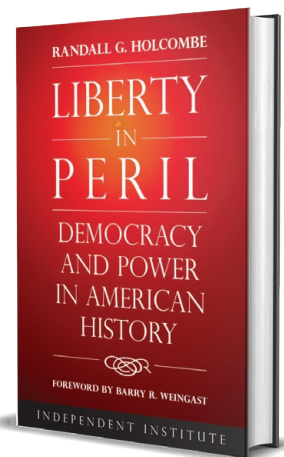
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