



Cornhusker Economics

The Unintended Consequences of China's One-Child Policy

In 1968, Paul Ehrlich published a book entitled *The Population Bomb* in which he argued that rapid population growth would overwhelm the world's capacity to feed, house, and otherwise care for the coming millions of people. At that time, the world population was about 3.5 billion growing at an average annual rate of 2.06 percent (World Bank 2023). At that rate of growth, the world's population would have been expected to double to 7.0 billion by 2001. In fact, population growth rates fell after the 1960s and world population reached only 6.2 billion in that year.

Fears of a population explosion were not confined to the United States and its allies. China with the world's largest population of 774.5 million (21.9 percent of the world total) and an annual population growth rate of 2.76 percent in 1970 launched a family planning campaign that resulted in a significant decline in fertility rates during the 1970s (Zhang 2017, Table 1). In 1979, the Chinese government initiated an even more aggressive policy to control the size of its population, limiting families to only one child. The "one-child" policy remained in place until 2015 when couples were allowed to have two children with this limit raised to three in 2021 (Goldman 2021).

The statistics in Table 1 seem to suggest that the one-child policy was effective in lowering population growth rates which fell from 1.3 percent in 1980 to only 0.1 percent in 2021. Most analysts, however, believe that the one-child policy had very limited effects on fertility and population growth which were both falling prior to its implementation. Zhang (2017) and Vandenbroucke (2016) argue that economic development leading to urbanization and sustained economic

growth was the primary driver of the declining population growth rates which they believe would have occurred even without the one-child policy. From an average of 6.61 children born to women in their child-bearing years in 1965, the fertility rate had already declined to 2.74 by 1980. Demographers consider a fertility rate of 2.1 to be the replacement rate that would maintain a stable population. The fertility rate in China actually fell below two in 1991 and is currently only 1.16 (World Bank 2023).

As population growth declines, the age structure of the population changes. In countries with rapid population growth, births are greater than deaths and the average age of people in those countries is low. In Sub-Saharan Africa, the average annual population growth rate has been around 2.7 percent since the 1960s and almost 53 percent of the people there are under 20 years of age. In countries with slower population growth, average ages are higher. In China and the United States, those less than 20 years of age account for 23.2 percent and 24.8 percent of the total respectively while those over 64 years of age make up 13.1 percent of the population in China and 16.7 percent in the United States compared with only 3.1 percent in Sub-Saharan Africa. In Japan where population growth is negative, those over 64 make up 29.8 percent of the population (World Bank 2023). Aging populations are of concern as the elderly are less likely to be working making them dependent on a smaller working-age population for support. The number of people over 64 years of age in China relative to the working-age population has increased from 7.12 percent in 1960 to 19.01 percent in 2021 (Table 1). The US Census Bureau predicts that China's population will peak in 2030 at 1,424 million falling steadily thereafter to less than a bil-

lion by 2100. By 2050, those over 64 are predicted to make up almost 33% of the working-age population in China and because net migration is likely to be negative (more leaving the country than entering) immigration will not augment the smaller work force (US Census Bureau 2023). This decline in the number of workers will have long-term negative consequences for the Chinese economy (*The Economist* 2023).

The conclusion that the one-child policy had a limited impact on fertility and population growth is bolstered by the fact that there has not been a significant increase in births following its relaxation. The policy has affected one other demographic indicator, however: the ratio of males to females. In humans, the natural sex ratio at birth is about 105 boys for every 100 girls. In many Asian countries, the desire for male heirs has given rise to a phenomenon known as “son-preference” (Anukriti et al. 2021). In China, this preference has been intensified by the one-child policy leading to significant imbalances in the number of men and women (Table 1). Prior to the one-child policy, the sex ratio at birth was similar to that of most other countries despite the fact that there has been a long history of son-preference. After its imposition, the practice of “sex-selective abortions” and other gender biases caused the sex ratio at birth to increase reaching almost 118 boys born for every 100 girls in 2005 (Anukriti et al.

2021, Table 1). This imbalance continues to reverberate through the population as shown by the ratios for individuals in their twenties. In 2021 there were about 114 men for every 100 women aged 20-29 in China compared with 104 men for every 100 women in that age group in the United States. Anukriti et al. (2021) point to research showing that this type of unbalanced sex ratio at the normal age of marriage contributes to increased crime, particularly crimes against women.

Not all of the effects of the one-child policy were negative. Gu (2022) finds that China’s fertility restrictions led to greater concentration of family resources on the one-child families were allowed to have with the result that individual human capital is greater than in multi-child households. The primary lessons of the one-child policy, however, are that such restrictions on individual choices about family arrangements not only infringe individual rights to decide on personal matters related to the establishment and nurturing of one’s family, but may also give rise to unforeseen negative consequences such as the unbalanced sex ratios found in China. The original justification for the one-child policy was that it would slow population growth but that outcome appears to come about naturally as a result of increased economic prosperity making such invasive population policies unnecessary.

Table 1: Chinese Demographic Statistics, 1960 – 2021 (Source: World Bank 2023)

| Year | Population (millions) | Population Growth Rate (%) | Fertility Rate (#children per woman) | Male-female sex ratio at birth | Male-female sex ratio ages 0-4 | Male-female sex ratio ages 20-24 | Male-female sex ratio ages 25-29 | Age Dependency Ratio (>64/(15-64)) |
|------|-----------------------|----------------------------|--------------------------------------|--------------------------------|--------------------------------|----------------------------------|----------------------------------|------------------------------------|
| 1960 | 667 | -- | 4.45 | 1.061 | 1.053 | 1.142 | 1.109 | 7.12 |
| 1965 | 715 | 2.4 | 6.61 | 1.062 | 1.055 | 1.114 | 1.137 | 6.64 |
| 1970 | 818 | 2.8 | 6.09 | 1.064 | 1.056 | 1.071 | 1.107 | 6.70 |
| 1975 | 916 | 1.8 | 3.57 | 1.066 | 1.058 | 1.038 | 1.069 | 7.10 |
| 1980 | 981 | 1.3 | 2.74 | 1.071 | 1.064 | 1.047 | 1.032 | 7.38 |
| 1985 | 1,051 | 1.4 | 2.63 | 1.086 | 1.072 | 1.046 | 1.041 | 7.54 |
| 1990 | 1,135 | 1.5 | 2.51 | 1.118 | 1.100 | 1.045 | 1.041 | 8.05 |
| 1995 | 1,205 | 1.1 | 1.59 | 1.152 | 1.129 | 1.051 | 1.044 | 9.00 |
| 2000 | 1,263 | 0.8 | 1.63 | 1.172 | 1.159 | 1.058 | 1.051 | 10.10 |
| 2005 | 1,304 | 0.6 | 1.62 | 1.178 | 1.173 | 1.068 | 1.056 | 10.88 |
| 2010 | 1,338 | 0.5 | 1.69 | 1.171 | 1.173 | 1.092 | 1.065 | 11.82 |
| 2015 | 1,380 | 0.6 | 1.67 | 1.150 | 1.161 | 1.125 | 1.091 | 13.99 |
| 2020 | 1,411 | 0.2 | 1.28 | 1.123 | 1.139 | 1.156 | 1.123 | 18.16 |
| 2021 | 1,412 | 0.1 | 1.16 | 1.118 | 1.133 | 1.158 | 1.132 | 19.01 |

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E. Wesley F. Peterson

Professor

Department of Agricultural Economics

University of Nebraska-Lincoln

epeterson1@unl.edu

402-472-7871