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The effects of China's universal two-child policy

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Abstract

In October, 2015, China's one-child policy was replaced by a universal two-child policy. The effects of the new policy are inevitably speculative, but predictions can be made based on recent trends. The population increase will be relatively small, peaking at 1·45 billion in 2029 (compared with a peak of 1·4 billion in 2023 if the one-child policy continued). The new policy will allow almost all Chinese people to have their preferred number of children. The benefits of the new policy include: a large reduction in abortions of unapproved pregnancies, virtual elimination of the problem of unregistered children, and a more normal sex ratio. All of these effects should improve health outcomes. Effects of the new policy on the shrinking workforce and rapid population ageing will not be evident for two decades. In the meantime, more sound policy actions are needed to meet the social, health, and care needs of the elderly population.

Introduction

In October, 2015, China announced that the iconic one-child policy had finally been replaced by a universal two-child policy. This change is highly significant because, for the first time in 36 years, no one in China is restricted to having just one child. In this Review, we examine the evidence for the potential effects of this shift in policy. The consequences are inevitably speculative, but a body of research has developed that aims to foresee the demographic, health, social, and policy effects of the universal two-child policy. Because much of this research is based on the effects of the preceding policy, we start with an analysis of the impact and controversies surrounding the one-child policy.

The one-child policy

The one-child policy was introduced in 1979 by the Chinese Government who considered population containment as essential to lifting China out of severe poverty caused by decades

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Declaration of interests

We declare no competing interests.

of economic mismanagement.[1] Between 1950 and 1970, the population had increased from 540 million to more than 800 million.[2] In response, the government introduced the mostly voluntary later-longer-fewer policy in the 1970s, which encouraged later childbearing, longer spacing between children, and fewer children. This policy led to a large fall in the total fertility rate from an estimated 5·9 births per woman in 1970, to 2·9 births per woman by 1979. Despite this downward trajectory in fertility, fears of overpopulation persisted, and so the one-child policy was introduced. Following the introduction of the policy, the total fertility rate continued to fall but less precipitously. Data from numerous sources showed that by the late 1990s the total fertility rate had fallen to between 1·5 and 1·7, and it has remained at this level since (figure 1).[4,5]

The one-child rule was strictly enforced for urban residents, who in 1980 accounted for about 20% of the population, but nearly half by 2010. In rural areas, this rule was particularly unpopular and deemed virtually unenforceable,[6] so from 1984 rural couples in most provinces were allowed to have a second child if their first was a girl, the so-called 1·5-child policy. In the six northwestern provinces, all rural couples were allowed a second child, irrespective of the sex of the first child. Two or more children were allowed for ethnic minorities, who account for around 9% of the total population.[2] These variations created a substantial difference in total fertility rate between rural and urban regions.[7] Enforcement was the responsibility of the then powerful National Family Planning Commission. The system of penalties was unpopular and inconsistently applied, with wide variations across the country, often at the discretion of local officials.[8]

As one of the most controversial policies in history, debate has raged over the positive and negative effects of the one-child policy. The authorities claim that 400 million births have been prevented, which contributed to increasing per capita GDP.[9] But this asssertion is contested by claims that the higher number of prevented births includes the effects of the later-longer-fewer policy, and that the one-child policy has prevented closer to 200 million births.[10] In addition, many scholars believe that rapid economic development alone would have reduced fertility substantially, as has been the case in many other developing countries, such as Thailand where the total fertility rate decreased from 5·6 in 1970, to 2·1 in 1990.[11] This possibility, together with the very rapid fall in fertility during the later-longer-fewer policy, raises the obvious question of whether the one-child policy was ever necessary at all.

The health outcomes of the one-child policy are also debated. Women have benefited from fewer pregnancies and births, which has contributed to a fall in the maternal mortality rate over the past three decades.[12] However, this advantage has been at the cost of deprivation of reproductive choice, not only in family size, but also in contraceptive choice. The insertion of intrauterine devices post partum without formal consent was routine in rural China, with permission needed for removal to have a second child.[13] Pregnancies that were unapproved under the policy (including any occurring outside marriage) have always been problematic. Most women undergo abortions voluntarily, but there are many accounts of forced abortions and sterilisations ordered by over-zealous local officials. Such atrocities peaked in the early years of the one-child policy, but have been rare over the past decade.[8]

There have been social benefits for women, with an acceleration of movement towards gender equality. The traditional preference for a son led many Chinese parents to invest relatively little in their daughters, but in the absence of brothers, household resources could focus on daughters.[14] Studies have found no significant differences between single-girl and single-boy families in relation to health outcomes and education (in terms of access, aspiration, or achievement), although differences have been recorded between brothers and sisters, with boys attending school on average 6 months longer.[15,16] Women now account for 52% of undergraduates and 48% of postgraduates.[17] Low fertility has also increased the chances of well-paid work and career advancement for women. More than a quarter of CEOs of medium and large Chinese companies are women.[18] This improvement in gender equality has contributed to improved health outcomes for young and middle-aged women.

A further controversy is the degree to which the one-child policy has contributed to the highly skewed sex ratio at birth. The sex ratio at birth, defined as the number of male births for every 100 female births, started to rise after the onset of the one-child policy, but this trend accelerated further after diagnostic ultrasound for sex determination became available from the late 1980s.[19] Although sex determination is illegal in China,[20] the high sex ratio at birth shows the lack of effective enforcement. The sex ratio at birth peaked at 121 in 2005, with latest estimates showing a fall to 116 in 2014, but with ratios as high as 140 in parts of rural central China.[20,21] In rural areas, the ratio rises greatly with second births, as couples try to ensure a male birth within the two-child limit. By 2020, there will be around 30 million excess, and hence unmarriageable, men of reproductive age in a country where getting married and having children is still a strong cultural expectation.[20,22] This situation could have considerable mental health consequences: never-married middle-aged and older men have significantly higher levels of depression,[23,24] they are more prone to aggression than married men, and may be more easily drawn into crime, leading to concerns about social instability.[21,25,26]

There is also considerable debate around the effects of the one-child policy on the wellbeing of children. These effects have been characterised by a stereotype of parents and grandparents overindulging the only-child, creating spoiled, selfish, unsociable, and obese so-called little emperors.[27] But the evidence is mixed. For example, studies that control for confounders show that only children have higher academic achievement, higher self-esteem, and greater confidence,[28–31] all of which might contribute to better health outcomes. These effects are partly attributed to household resources being directed towards the only child with overall beneficial effects on education and health.[32] However, there is also evidence to the contrary: a series of studies in young adult soldiers have shown that soldiers with siblings are significantly more motivated, hard working, obedient, sociable, and mentally stable than are those who are only children.[33–37]

There is less controversy about the effects of the one-child policy on the rapidly growing ageing population.[38] Indeed, fears about the ageing population have probably been the most influential factor in the decision to lift the one-child policy. Although ageing populations are increasing worldwide, the one-child policy has rapidly accelerated the process in China. The effect of large numbers of only children on family structures has its own name in China: the 4:2:1 effect, referring to couples who are responsible for the care of their four older parents

and one child. Despite the state-sponsored New Rural Old Age Insurance Programme, which started in 2009, most Chinese elderly people, especially those in rural areas, still lack full pension coverage, so are largely dependent on their children for financial support.[7,39] Confucian tradition still dictates that care of the elderly parents is a filial duty. China is perhaps unique in having laws that adult children can be compelled to provide financial support to their elderly parents.[40] This culture places a considerable burden on 4:2:1 families. Although sons have traditionally supported parents financially,[41] daughters (and sons-in-law) have generally cared for their older parents.[42,43] Thus, the shortage of women, partly caused by the one-child policy, is affecting the quantity and quality of elderly care, especially in rural areas. The growth in the elderly population is also putting serious pressures on the health system, which is not yet adapted to deal with the complex and expensive comorbidities of an ageing population.[44]

The introduction of the universal two-child policy

Demographers warned of the negative consequences of the one-child policy almost from the outset.[45–51] Their arguments centred on the fact that the demographic dividend—ie, the accelerated economic growth that results from a decline in fertility and mortality—was reversing. Soon, the negative consequences were beginning to outweigh the positive. The negatives include accelerating population ageing, the skewed sex ratio, and the decline in the working-age population, which would threaten economic growth. Moreover, in 1980 the government had pledged that the one-child policy would last for just one generation, so change was overdue. But contrary to the views of most demographers,[7,51–55] the government feared that lifting the policy would lead to a baby boom, so the government's response has been cautious with a series of gradually introduced exemptions. By 2007, all provinces (except Henan, which followed in 2011) had started to permit couples who were both only-children to have two children. In November, 2013, came a policy allowing couples in which at least one of the marital partners was an only-child to have two children. But by May, 2015, only 1·45 million (13·2%) of 11 million eligible couples applied for permission to have a second child.[56] The low uptake has been attributed to the high cost of rearing children in cities, because the overwhelming majority of these eligible couples were urban residents.[57] The couples who applied for a second child were younger, had higher household income, a young first child more likely to be girl, and parents who wanted a second grandchild.[58] This low uptake, together with appeals from scholars and the media, have probably accelerated the announcement of the universal two-child policy.

The potential effects of the universal two-child policy

Effects on fertility

The fertility level after the universal two-child policy is a key factor that will affect population growth, the proportion of elderly people, the workforce and economic development, the sex ratio, public health, health systems, and the environment. But the effects of the new policy may be less than expected. There is now clear evidence that the role of fertility policy is diminishing fast, and that fertility in contemporary China, as elsewhere, is socioeconomically determined.[8,11]

Surveys of fertility preference[59–61] undertaken over the past two decades show that China has indeed become a low fertility culture, and such surveys are generally thought to somewhat overestimate actual fertility.[62,63] The overall consensus from these studies is that around 90% of women report they want one or two children, whereas in large cities nearly two-thirds of women state a preference for only one child. Reasons given include the high cost of rearing children, especially for education, and the effect on parental lifestyle and on the mother's career.[64–66]

The challenge is that future fertility cannot be accurately forecast, because of its various uncertain determinants. For example, the lower fertility preference in urban areas together with the current drive towards urbanisation (70% urbanisation planned by 2030), is likely to keep fertility low. However, several scholars believe the preference for two children will gather momentum.[67] We present here the most likely scenario of changes in Chinese fertility in the next few decades based on various demographic analyses. Given the lower socioeconomic level in rural areas, and the fact that minority ethnic groups are allowed three or more children, the total fertility rate is assumed to rise from the current 2·01 in rural areas and 1·24 in urban areas, to 2·15 and 1·67, respectively, in the next decade. The combined rural–urban total fertility rate is estimated to be 1·88 in 2017, and 1·81 in 2030.[7]

In the discussion to follow, we explore the projected effects of the universal two-child policy, drawing comparisons with the scenario of the one-child policy remaining in place. These projections are based on population projections using the assumed total fertility rates outlined above, and with the same background demographic parameters (such as medium mortality and rural–urban migration).[7]

Effects on population ageing

The Chinese population would age quickly under either policy scheme (figure 2). The percentage of over-65s under the universal two-child policy is expected to reach 18% in 2030, with the proportion about twice as high in rural areas than in urban areas.[7,68] Population ageing is a global occurrence: today, the UK's over-65s account for 17% of the total population, and Japan's 26%.[69] The rapid acceleration in the ageing population associated with the one-child policy has created a significant challenge for China and population ageing will be substantially less serious with the universal two-child policy than if the one-child policy remained unchanged (figure 2). There are two particularly vulnerable groups of elderly people in China. The first is the so-called empty-nesters (living in households without children), mainly caused by the large out-migration of young people during rapid urbanisation and job mobility.[7,38] Around half of these empty-nesters live alone and half with a spouse.[70] Their numbers will rise over the next two decades and the proportion in rural areas will grow to twice of that in urban areas by 2050.[7] Empty-nesters, especially those living alone, are particularly prone to mental health problems.[71] The second vulnerable group is disabled elderly people. The number of disabled people aged older than 65 years is predicted to increase rapidly from 8·4 million in 2010, to 19 million in 2030, and 37 million in 2050.[72] Many of these people are in the extreme elderly age group (≥80 years) and their health care, personal, and social care needs present a huge challenge.

Effects on population size, workforce, and economic development

The universal two-child policy is predicted to lead to a peak population of around 1·45 billion in 2029 and then gradually decline (table). Under a continuing one-child policy scenario, the population would peak at around 1·40 billion in 2023 and then rapidly decline (table). The total population size under the one-child policy would be smaller than under the universal two-child policy (table), which would cause serious problems for ageing, pension fund deficiencies, and labour shortages.[73,74] Under a continuing one-child policy, two-fifths of the reduced population size in 2030, and one-half in 2050, would be aged 18–64 years (ie, of working age), and the other reductions would be in children aged 0–17 (ie, the forthcoming workforce; figure 3).[7] The workforce will not be affected by the new policy in the short term. It will slowly decline until 2020 and moderately decline from 2020 to 2030, with no difference between the two policies. But beyond 2030, increased births under the universal two-child policy would lead to a substantially larger workforce, by 30 million in 2040, and 60 million in 2050, compared to the unchanged one-child policy (figure 3). A large working-age population has been shown to be crucial to economic growth. About 27% of the increase in Chinese GDP from 1982 to 2000 is estimated to be due to the large working-age population, which resulted from the baby boom of the 1950s and 1960s.[75] Elsewhere in Asia, plentiful labour contributed substantially to the rapid growth of GDP in South Korea, Singapore, Taiwan, and Hong Kong in the 1970s and 1980s.[76] These factors add strength to the positive and economic effects of the universal two-child policy.[77,78]

The elderly dependency ratio will increase sharply under either policy scenario. Defined as the number of people aged older than 65 years divided by number of working-age people aged 18–64 years, it is desirable that this figure remains low in any population. Only after 2030 will the demographic benefits of the two-child policy become evident in producing a considerably lower elderly dependency ratio than the one-child policy (figure 4).[7] Further, the universal two-child policy transition will result in greater consumption and job opportunities associated with childbearing and child-rearing, which will contribute to economic growth.

Effects on the sex ratio

The 2000 census data show that in areas with a 1·5-child policy, the sex ratio at birth was as high as 125 compared with 109 in areas with a two-child policy, which suggests that the 1·5-child policy has specifically exacerbated China's high sex ratio at birth.[79] This policy was interpreted by many Chinese people as implying that one boy was sufficient to ensure family welfare, but one girl was not, and thus that female children had lesser value, reinforcing the culture of preference for sons and increasing China's sex ratio at birth.[5,80,81] Evidence of this effect emerged from an experimental programme in four rural areas (with a total population of 8 million) in four provinces. In these areas, a two-child policy operated from the mid-1980s. The result was substantially lower sex ratios than those in the surrounding rural areas where the 1·5-child policy had been implemented.[82] Furthermore, slightly more than one-quarter of the excess sex ratio at birth in the 1·5-child policy areas is due to the structural effects of not allowing couples whose first child is a boy to have a second birth.[5] On this evidence, adopting the universal two-child policy will make significant contributions to reducing the sex ratio at birth in China, but it is unlikely to totally normalise for many

years to come, because of the long-standing preference for sons, especially in rural areas, and continued access to sex-selective technologies.

Effects on population health

Replacing the one-child policy with the universal two-child policy will have positive effects on health for children, adults, and elderly people.

The new policy will greatly reduce or eliminate some of the most serious effects on children of the one-child policy. Although already uncommon, the practice of abandonment of unwanted girls soon after birth, with institutionalisation in orphanages and negative health and social consequences, should become much rarer. Similarly, so-called blacklisted, out-of-quota children should cease to exist. These are children without household registration, caused by their parents' violation of the one-child policy and their refusal or inability to pay the penalty. Lacking registration creates barriers to the child's educational opportunity and social status, with consequent poorer mental health outcomes in many cases.[83] In fact, with the announcement of the two-child policy, the status of existing blacklisted children is being normalised.[84] The new policy is also likely to reduce discrimination in nutrition, education, and health care against girls, which persists in some rural areas.[85]

With respect to the health of adults, the new policy should substantially reduce the tragedy of many millions of abortions due to so-called out-of-quota second pregnancies. In addition, there will be a substantial reduction in sex-selective abortions, which presents a considerable health risk since they are of necessity done late, during the second trimester.[86] As the sex ratio at birth decreases with the new policy, there will be a concomitant reduction in the numbers of unmarriageable men with higher rates of depression and other mental health problems.[21,24]

Perhaps the most feared family tragedy under the one-child policy was the premature death of an only-child. Data from the 2000 census showed that the average probability of the only-child's death was 4% before their mother reached age 45 years, 12% before they reached 80 years, 16% before 85 years, and 21% before they reached 90 years.[87] Permanent childlessness for a couple or lone parent can have potentially serious consequences for their mental and physical health,[88] especially when many elderly Chinese people depend on offspring for care. Demographers have estimated that there were about 1 million permanently childless families because of death of the only-child in 2010, and the number has been increasing by about 78 000 every year.[89] It is expected that this socially undesirable trend will substantially decline under the universal two-child policy.

Evidence from longitudinal healthy ageing surveys[42,90] indicates that elderly people cared for by daughters (and sons-in-law) rather than sons (and daughters-in-law) have a lower mortality and lower probability of declining cognitive capacity. Further evidence suggests that older parents are more satisfied with care provided by daughters than by sons, and that older parents have better relationships with their daughters than sons.[43] The implementation of the one-child policy, especially in cities, prevented almost half of all couples from having a daughter; the new policy will afford many more couples the opportunity of a daughter. The

outcome will eventually be more elderly parents benefiting from the care of daughters, thus enhancing their mental and physical health.[42,43]

Effects on health systems

Although the new policy is unlikely to lead to a very large increase in the average birth rate for China as whole, highly heterogeneous development across the country means that increases in fertility may be greater in particular regions, such as in some rural areas and small towns. The authorities will need to monitor these changes locally, so that increased capacity in health services, especially maternal and child health services, can be planned as necessary.

A major concern is the acute shortage of paediatricians and paediatric nurses across the country, which has worsened over the past decade.[91] Lower incomes, highly pressured working conditions, and demanding parents all contribute to the unpopularity of paediatrics as a specialty.[92] So any increase in birth rate resulting from the two-child policy will exacerbate pressures on an already stressed system. A study[93] based on birth rate predictions until 2020 estimated that around 190 000 more paediatricians are needed. Although overall numbers of personnel in maternal and child health services are sufficient, there are concerns for the quality of these services.[92] Quality could deteriorate if pressure on these services increases with the birth rate.

Effects on natural resources and environment

In the past few decades, growth in the Chinese population has been widely assumed to threaten natural resources and the environment. However, evidence suggests that this is unlikely to occur as a consequence of the universal two-child policy. First, the overall increase in population will be modest, with a peak of approximately 3% higher total population than would occur under the one-child policy. Second, it is true that in 2011, water and land resources per person in China were reduced by 30% and 36%, respectively, compared with 1979, attributable to population growth. But the declines levelled off after 2000. Under the universal two-child policy, the Chinese average water resource per person and average arable land per person would reach the lowest value around 2029 (reduced by about 2% and 6%, respectively, compared with 2011), and then start to gradually increase as the total population size decreases after 2029.[7]

The other effects

The new policy will allow almost all couples to meet their reproductive preference.[59,60] No longer will couples face the consequences of penalties and stress associated with having an unapproved second child. A divisiveness was created by the one-child policy, with different rules applying to neighbours and friends, as well as resentment towards the wealthy who were able to afford the penalties for having two children. These negative effects are expected to be totally eliminated. Further, the new policy will greatly reduce the corruption associated with the enforcement of the one-child policy. This corruption included bribing of officials for permission for more than one child, and the often unregulated collection of fines from birth control violators.[51] All of these outcomes will help to create a more harmonious society, an attribute highly regarded by the Chinese Government and the people.

Policy implications and recommendations

Population ageing

The universal two-child policy was introduced principally to address the serious challenges of population ageing, one of the greatest challenges for China in the 21st century. However, in the next 20 years the universal two-child policy will have only a marginal effect on the rapid acceleration in population ageing if no other adequate policy actions are taken. Compared with some industrialised countries, where room is very limited for increasing fertility, raising retirement age, and expanding pension programmes in rural areas, China has three unique opportunities to address the challenge of rapid population ageing. First, the universal two-child policy will substantially increase fertility in some localities, especially in rural areas and small towns. Second, the exceptionally low compulsory retirement age can be raised. The retirement age in China, 55 years for women and 60 years for men, is among the lowest in the world. Increasing the retirement age improves physical and mental health outcomes.[94] It prolongs pension contributions, improving the financial stability of the pension system,[95] while increasing post-retirement payments. It will also ameliorate the predicted labour shortage, seen as a consequence of 36 years of the one-child policy, while also buying the time needed for the benefits of the universal two-child policy to be fully realised. Third, state-sponsored pension systems must be strengthened, especially in rural areas, where rapid ageing will be a greater problem in the coming decades, due to continuing rural–urban migration of young people.[7] These new rural old age insurance programmes will not only enhance senior citizens' welfare, but also create a huge amount of capital by collecting premiums from hundreds of millions of new programme participants. This increased capital will contribute to further economic development. Greater financial independence for the elderly will also reduce reliance on sons, resulting in a more enlightened attitude towards the relative value of sons and daughters.

In addition to these three fundamental policy actions, the authorities should improve awareness and actively encourage change in a number of areas. Three-generation living arrangements (either co-residence or close proximity) should be encouraged. Such arrangements are perhaps especially appropriate in China, given the long and deep-rooted tradition of filial piety to old people.[96] Older parents who live with their adult children have better cognitive function, self-rated health, and life satisfaction.[97] Since grandparents traditionally assume childcare responsibilities, such arrangements increase the workforce participation of female adult children, with consequent financial and health benefits.[98] They also decrease home-based care expenditures for disabled elderly.[99] A policy encouraging three-generation living was very successful in Singapore.[100] In particular support for rural elderly people to go to live with, or near, city-dwelling children should be a priority.

Further, the benefits of daughters rather than sons for old age care[42,43] should be widely publicised. Older parents should be encouraged to live with (or nearby) an adult daughter and son-in-law, even if they have both son and daughter. This strategy would gradually change the tradition of daughters marrying-out of their own families, would be beneficial for older adults, and also help to reduce the preference for sons, with obvious effects on the sex ratio at birth.

Finally, although the sex ratio at birth will decline with the beneficial effects of a more balanced sex ratio in the reproductive years, especially in rural areas, these effects can only be gradual. In the meantime, the needs of ageing single men, as an especially vulnerable group, will require recognition in policy. Overall, if sound policy actions are taken promptly and effectively, China should be able to successfully address the challenges of an ageing population.

Health systems

The shortfall in health personnel, especially in paediatrics, requires short-term and long-term solutions. In the short term, much of the work currently done by paediatricians in acute hospitals is primary care in nature, and could be provided by maternal and child health doctors in community health centres. Such personnel would need to undergo enhanced short-term training in paediatrics, to upgrade their skills and thus improve service quality. In the longer term, measures should be taken to make paediatrics more attractive as a specialty, for example through bonus systems, improved working conditions, and incentives (linked to lower copayments) for parents to use primary care services and thus reduce the huge pressures on specialist paediatric services.

In addition, the opportunity to harness and redeploy the huge family planning workforce seems obvious. There are more than 5 million administrative bureaucrats and fieldworkers.[6] There will be considerable spare capacity under the universal two-child policy, because the bureaucratic infrastructure for birth approvals and punishments for out-of-quota second births will no longer be required. Training and redeployment of the current family planning workforce in elderly care and healthy ageing social work would seem an obvious solution to address the challenges of the continued growth of an ageing population while providing productive jobs for these workers.

Conclusion

Since the onset of the one-child policy massive socioeconomic change in China has led to a low fertility culture. The two-child policy will therefore not result in a baby boom, but rather a moderate increase in fertility. But the many negative effects of the one-child policy will disappear and nearly all Chinese people will have their desired family size. The next step, the total removal of the fertility control policy, needs to be considered sooner rather than later.

In short, in the coming decades the universal two-child policy will help to address the challenge of population ageing, reduce the sex ratio at birth, remove the more oppressive elements of the one-child policy, contribute to economic growth, and allow the overwhelming majority of couples to have the number of children they want. The birth rate must be monitored locally, so that improved capacity in maternal and child health services can be planned as necessary. We believe that the introduction of the universal two-child policy was a necessary and highly desirable action that will be beneficial for all sectors of Chinese society.

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Search strategy

We collected data for this Review from Chinese and English language sources. For work in English, we searched Web of Science, PubMed, and Google Scholar. We searched for Chinese sources from Wan Fan database search engine and the Knowledge Network search engine. Search terms were “one-child policy”, “two child policy”, “population policy”, and “China”. We also searched references from key articles by hand.

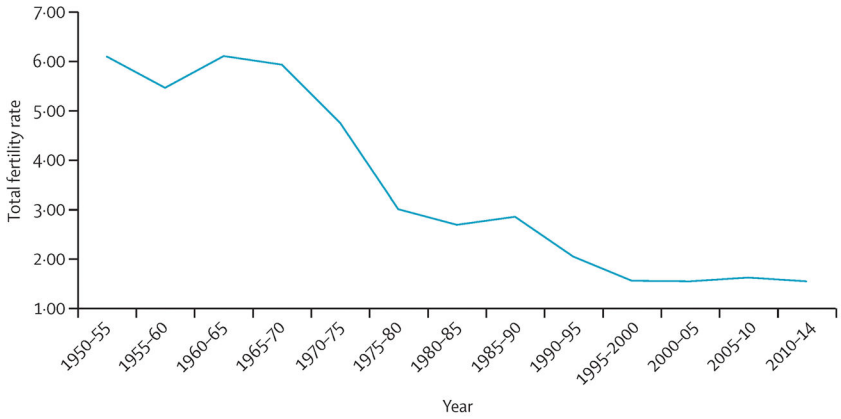

Figure 1. Total fertility rate in China, from 1950 to 2014

Data from United Nations Population Division Department of Economic and Social Affairs.[3]

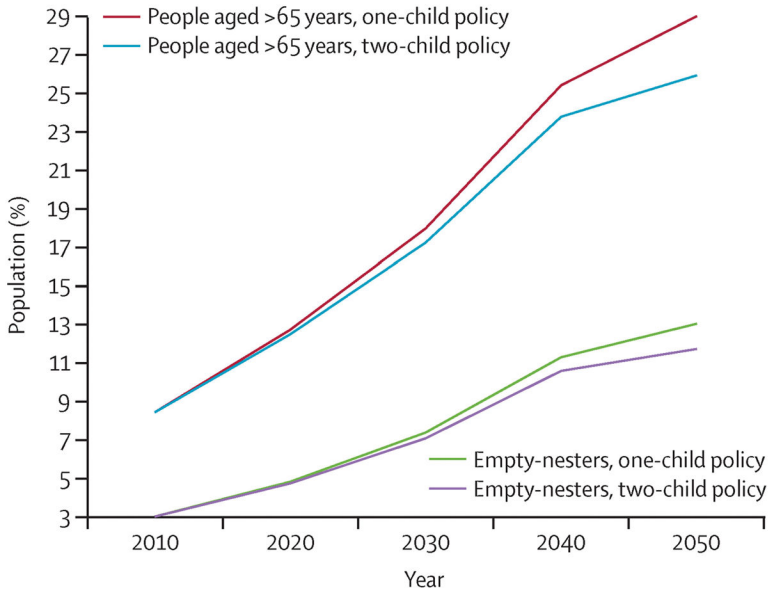

Figure 2. Percentages of all people aged ≥65 years and people aged ≥65 years living in empty-nest households among total population

Data from Zeng et al.[7]

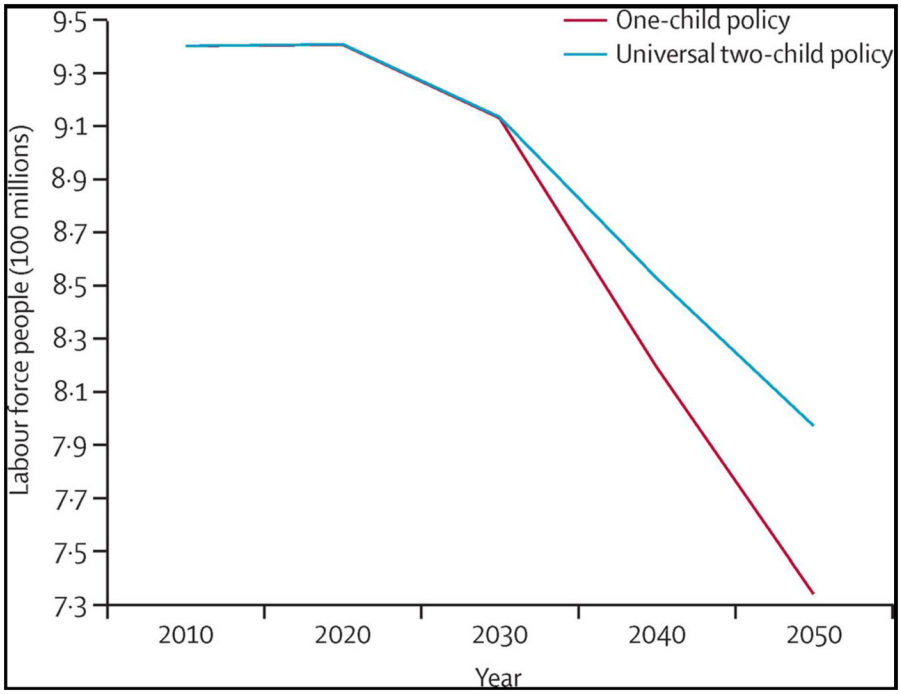

Figure 3. Number of people in labour force (age 18–64 years)
Units are 100 millions. Data from Zeng et al.[7]

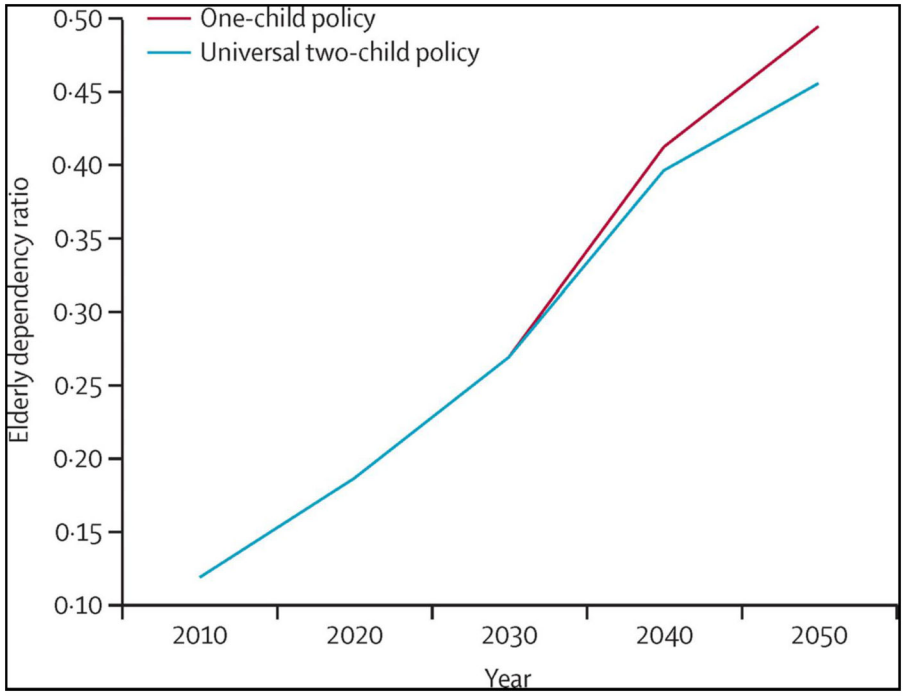

Figure 4. Elderly dependency ratios
Data from Zeng et al.[7]

Table

Projected population size (in billions) under different fertility policy scenarios, 2010–50

	Universal two-child policy	One-child policy
2010	1·340	1·340
2020	1·423	1·396
2030	1·445	1·386
2040	1·441	1·348
2050	1·420	1·269
Year of peak population size	2029	2023
Population size in peak year	1·445	1·399